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ABSTRACT

Relational Grammar, which has evolved from transformational grammar, relies on a "universal grammar" approach. By closely studying this approach, linguists will be able to understand Relational Grammar (RG) well enough to be able to participate in its further development. The basic assumptions of RG are that "subject-of," "direct object-of" and "indirect object-of" are universal grammatical relations based on straightforward semantic notions such as agency, recipiency, and affect. How these universal grammatical relations are manifested in various languages is illustrated by the examples of noun phrase marking, verb marking, linear precedence, advancements, replacements, relative clauses and other syntactic devices. In the appendices, the RG laws and tendencies, syntactic tests for grammatical relations, and marking devices are summarized. Direction for further study is provided by the attached bibliography and footnote references. (PMJ)

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# Grammatical Relations in Universal Grammar

Donald G. Frantz

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# GRAMMATICAL RELATIONS

# IN

# UNIVERSAL GRAMMAR

Donald G. Frantz

Work Papers 23

Supplement

Editors: John P. Daly
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GRAMMATICAL RELATIONS IN UNIVERSAL GRAMMAR
Donald G. Frantz
Work Papers 23 Supplement
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University of North Dakota Session

## PREFACE

### to the 1979 revision

I feel it is important to emphasize here that current RG is quite a different thing than the early versions some readers may have been exposed to. Early RG was a version of transformational grammar. In particular, derivations, cyclic rule application, and some movement rules were integral parts of the theory. These have all been abandoned in the RG framework of the past two years or so.

Most recently, David Johnson and Paul Postal have built a well-defined theory called Arc Pair Grammar (APG) in which most of the concepts of RG are tightly defined. But Johnson and Postal stress that APG is not just a formalism of RG, for it crucially makes use of two new relations between arcs: 'sponsor' and 'erase'.

This version of G.R.U.G. has been but minimally influenced by APG. Where I knowingly go against their tenets, I have indicated this in a footnote.

I should also warn the reader that this syllabus still contains material that is innovative on my part.

August 1979
Summer Institute of Linguistics
University of North Dakota

## PREFACE

### to the 1977 version

Relational Grammar (RG), being developed primarily by Paul Postal, David Perlmutter, and David Johnson, has already provided insights into the syntax of numerous languages. Some of these insights are almost stunning in that while they involve the kind of facts uninetwork RG makes almost expectable, those facts are ones which most other frameworks can deal with only by ad hoc devices.

Because RG is a 'universal grammar' approach, it is important that it continue to be tested and revised in accordance with data from around the world. Unfortunately, there is little published material on RG for investigators and students who would be able to participate in, and benefit from, the development of this approach to universal grammar. The purpose of this syllabus is to make it possible for others to "get into" RG sufficiently to be a part of this exciting stage of its development.

This syllabus certainly does not claim to present the canonical or official view of the developers of RG. Nevertheless, where it does come close to giving an accurate picture of their current conception of the framework, this is primarily due to the generous amounts of time given repeatedly and unselfishly by David Perlmutter as he answered my questions about the framework and its application to the analysis of several languages. I must emphasize, however, that some of what is included here is innovative and and possibly incompatible with tenets held by the developers of RG.

August 1977
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University of North Dakota session

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# GRAMMATICAL RELATIONS IN UNIVERSAL GRAMMAR

Donald G. Frantz

Summer Institute of Linguistics

## I. Introduction

When asked to describe a relatively simple set of transitive and intransitive clauses in a given language, using whatever linguistic model they have had experience with, advanced students are quite consistent as a group in labelling nominals as subject, direct object, and indirect object. I conclude that on the basis of their past experience with data from a large variety of languages, they have come to expect a fairly straightforward correlation between the semantic role of a nominal and its syntactic function, and furthermore that they expect these syntactic functions to include three that are appropriately labelled subject, direct object, and indirect object, these three being major in that they most radically subcategorize verbs and are most frequently referred to by rules of grammar.

A framework for universal grammar is being developed primarily by Paul Postal, David Perlmutter, David Johnson and others, which has as its basic assumption that subject-of, direct object-of, and indirect object-of are universal grammatical relations. The consistency (mentioned above) of use of these as labels by analysts is accounted for by the claim that there are fairly straightforward principles for assigning (initial) grammatical relations on the basis of semantic notions such as agency, recipiency, affect, etc.

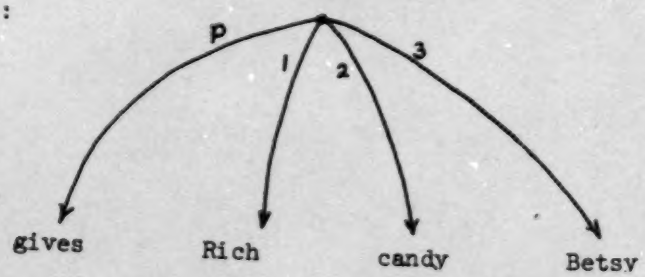
In what follows we shall look at a number of recurring language phenomena involving grammatical relations. Because most of these allow a universal formulation only in terms of relational networks rather than linear or constituent structures, we shall make use of Postal and Perlmutter's promising framework, generally referred to as Relational Grammar (RG).

## II. Terms and Term 'Marking'

As indicated in the introduction, RG assumes that subject-of, direct object-of, and indirect object-of are primes. These are relations which are borne by nominals in a clause. There are many other grammatical relations which nominals may bear, but these three have a special status and are referred to as terms. (they will be abbreviated from this point on as 1, 2, and 3, respectively.)

Every basic clause will also have a predicate (usually a verb). It is common to speak of this predicate as "governing" the nominals which bear relations in the same clause; conversely, the nominals are said to be "dependents" of the predicate.

We can visually represent a clause as a network, labelling arcs to indicate the grammatical relations involved. P will be used to label the predicate relation, which the governing verb bears. For example, the following partial network shows the grammatical relations of Rich gives candy to Betsy:



We will classify the devices languages use to indicate grammatical relations (GR's) into three categories: markings within the noun phrases (NP's) that bear the relations, markings on the verb which governs the dependents, and linear order (precedence). As we shall see, languages use combinations of these. We will concentrate in this section on indication of the term relations.

A. NP marking

Case inflection, prepositions, and post-positions are the traditional labels for such markings. While there is some interchangeability between the labels 'case' and 'pre-/post-position' (henceforth PP), 'case' is most often used for inflectional endings which are not easily segmentable, while PP's are usually considered clitics or separate words. For example, I would classify the NP markings of Japanese as PP's, though they are often referred to as "case markers":

(1) Sensei ga hon o kaita.
teacher 1 book 2 wrote

*A teacher wrote a book.*

(2) kodomo ga neru.
child 1 sleeps

*The child sleeps.*

(3) Sensei ga kodomo ni hon o yatta.
teacher 1 child 3 book 2 gave

*A teacher gave a book to the child.*

(In glosses, numerals will be used as indicators of both person [1s = first person singular, 2p = second person plural, etc.] and term GR's. Whenever there is danger of ambiguity, I will underline numerals which abbreviate GR's.)

As should be evident, Japanese marks 1's with PP ga, 2's with PP o, and 3's with PP ni.[1] (Generally Japanese terms will be linearly ordered as in (3), so we see that both NP marking and linear order (=word order) help to signal GR's.)

Latin is the classic example of a language marking NP's inflectionally:

(4) Agricolae pugnant.
farmer:nom:pl fight:3p

*The farmers are fighting.*

(5) Agricola puerum vocat.
farmer: nom:sg boy:accus:sg call:3s

*The farmer calls the boy.*

(6) Puer agricolam vocat.
boy:nom:sg farmer:accus:sg call:3s

*The boy calls the farmer.*

(7) Agricola puerō aquam dat.
farmer:nom:sg boy:dat:sg water:accus:sg give:3s

*The farmer gives water to the boy.*

Inflectional endings of nouns (nominative, accusative, and dative case) mark subject, direct object, and indirect object. (In addition, the verb agrees with the subject in person and number, so this can help indicate the subject.)

Finally, as an example of a preposition marking a term, note that French marks 3's with preposition à:

(8) Je donne la montre à Marie.
I give the:fem watch to M.

*I give the watch to Marie.*

For third person pronouns, French distinguishes 2's (accus.) and 3's (dat.), as seen in (9) - (11):

(9) Je la donne à Marie.
I 3s:fem:accus give to M.

*I give it to Marie.*

(10) Je lui donne la montre.
I 3s:dat give the watch

*I give the watch to her.*

(11) Je la lui donne.

*I give it to her.*

B. Verb marking

In a language where verbs agree with several features (e.g. person, number, gender) of terms, this can serve as the major device for indicating termhood. Blackfoot verbs agree with person and number of their 1's, and with person, number, and gender of their 2's, as partially illustrated in (12) - (18):[2]

(12) (Niistowa) nit-aino-a-wa oma ninaa-wa.
1s 1-see-direct-3s that man-3s

*I see the man.*

(13) (Kiistowa) kit-aino-a-wa oma ninaa-wa.
2s 2-see-direct-3s that man-3s

*You (sg) see the man.*

(14) (Kiistowaawa) kit-aino-a-waawa oma ninaa-wa.
2p 2-see-direct-2p:3s that man-3s

*You (pl) see the man.*

(15) (Kiistowa) kit-aino-a-yi omiiksi nina-iksi.
2s 2-see-direct-3p those man-3p

*You (sg) see the men.*

(16) (Niistowa) nit-aino-ok-a oma ninaa-wa.
1s 1-see-inverse-3s that man-3s

*The man sees me.*

(17) (Niistonnaana) nit-aino-ok-innaan-a oma ninaa-wa.
lp 1-see-inverse-1p-3s that man-3s

*The man sees us.*

(18) (Niistonnaana) nit-aino-ok-innaan-i omiiksi nina-ikso.
lp 1-see-inverse-1p-3p those man-3p

*The men see us.*

(Observe that (12) and (16) differ only in verb inflection, though their GR's are converse. This difference is indicated by the affixes glossed 'direct' and 'inverse'.)

Another type of verb marking is registration, in which the presence of a nominal bearing a particular grammatical relation is registered in the verb, but there is no agreement with the individual features of that nominal. This is the case in Indonesian, where prefix mem- evidently registers the presence of a final 2 (unless it bears some 'overlay' relation -see VII):

(19) Saja mem-bawa surat itu.
I trans-bring letter the

*I bring the letter.*

C. Linear precedence

Chinese is an excellent example of a language in which termhood is indicated by word order:

(20) Wǒ péngyou nǔlì xuéxí.
my friend hard study

*My friend studies hard.*

(21) Wǒ kàn bào.
I read newspaper

*I read the newspaper.*

(22) Wǒ gěi tā shū.
I give her book

*I give the book to her.*

Observe the order 1 V 3 2 in (22).

Before leaving this section, we should define two derivative relations to which various rules of grammar refer. These are:

ergative = 1 of a verb that also has a 2.

absolutive = 2, or 1 if there is no 2.

Marking of terms in a number of languages follows this pattern, as exemplified in (23) and (24) from Nyamal (data from Klokeid, to appear); note that the 2 of (23) and the 1 of (24) are both unmarked, for they are absolutives, while the 1 of (23) has the ergative case ending, indicating it is the 1 of a transitive clause:

(23) Ngaja-lu kamparnarna yurta.
I-erg cooked fish

*I cooked fish.*

(24) Ngaja yidangkaji-karni yanakulya.
I y.-to went

*I went to Yidangkaji.*

III. Multiple-relation Sanctions

A. Advancements

1. Passive (2-1)

(1) The suspect was chased by the policeman.

Looking at a sentence such as (1), it is clear that suspect has syntactic properties associated with 1's in English: (a) preverbal position; (b) verb agrees with it as third person (actually in this case, first or third person singular); (c) if we substitute a pronoun, it will be nominative case (e.g. 'she'). We also recognize that semantically the policeman is an agent and the suspect is a patient. The semantic roles of these two nominals correlate more directly with the grammatical relations of (2):

(2) The policeman chased the suspect.

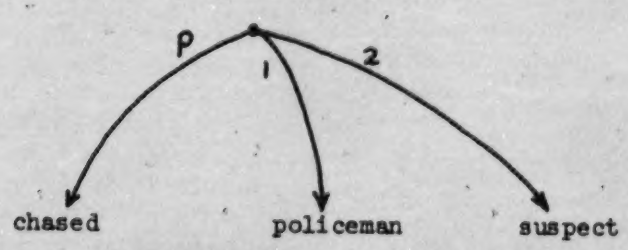
Because of such facts, Kenneth Pike, in his early work in tagmemics, did not want to label the subjects of sentences such as (1) and (2) as the same tagmeme; hence he labelled the subject of (1) "subject-as-undergoer". Austin Hale and Pike worked out a revised framework which explicitly recognizes the complex nature of the tagmeme as Pike conceived it, so that in addition to grammatical function and class of fillers of this function, tagmemes are distinguished on the basis of their 'role'. Thus the subject of (1) would have 'undergoer' as its role and 'subject' as its grammatical function.

Transformational grammarians have accounted for the relationship between (1) and (2) by deriving them from the same phrase structure (early TG) or from very similar deep structures (later TG).

Relational grammar accounts for (1) by saying that the suspect bears two relations to chase; it is both a 2 and a 1. The 2 relation correlates directly with the semantic role of patient, while the 1 relation accounts for the subject properties of the suspect in (1). Now, while a given nominal can bear more than one relation in a given clause, it must not bear more than one in a single (final) stratum of relations. Thus the two relations of the suspect are in different strata: the suspect is the initial 2 and the final 1.

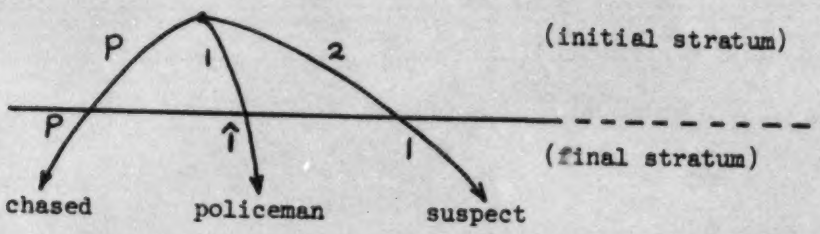
The partial network for (2) is (2'):

(2')



The network for (1) will differ in having an addditional set of GR's, as in (1'):[3]

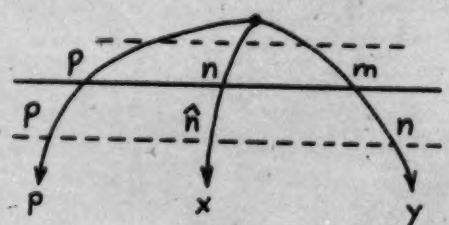
(1')




We refer to the two strata as 'initial' and 'final'. The final GR borne by policeman is a special one required by the fact that suspect bears the final 1 relation, which policeman bore in the initial stratum. No two nominals may bear the same term relation to a given verb in the same stratum (this constraint) is known as the the stratal uniqueness law); as a consequence, policeman is en chômage (French for 'unemployed') in the final stratum of (1'). We refer to it as a chômeur (French for 'one who is unemployed'). Specifically, policeman is a 1-chomeur, abbreviated '$\hat{1}$'. The preposition by in (1) flags the $\hat{1}$; i.e. it marks policeman as a $\hat{1}$. Chomeurs are non-terms, and occur in networks according to a universal condition:

> The chomeur condition: If x bears term relation n in stratum $S_i$, and if y (where $y \neq x$) bears term relation n in $S_{i+1}$, then x bears relation n-chomeur ($\hat{n}$) in $S_{i+1}$.

The following network is schematic for this condition:



The two GR's borne by suspect in (1') form an ordered pair referred to as an advancement. This system of nomenclature assumes a ranking system of terms, such that 1 outranks 2 outranks 3. Thus if a nominal bears a higher ranked GR in $S_{i+1}$ than it did in $S_i$, this is referred to as an advancement.

Before moving on to other advancements, here is another example of 2-1, this time from Russian:

(3) Policij-a zaderza-l prestupnik-u.
police-nom arrest-pst criminal-accus

*The police arrested the criminal.*

(4) Prestupnik zaderžan polici-ej.
criminal:nom arrest:part:masc:sg police-instr

*The criminal was arrested by the police.*

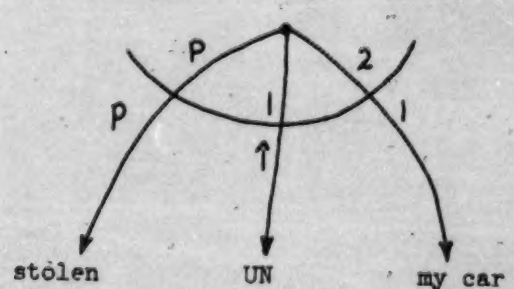
As we see in (4), the $\hat{1}$ in Russian is marked with the same case as is used to mark instruments. This is quite common. Other recurrent devices for marking $\hat{1}$'s are the cases or PP's associated with means, source, location and possessor.

It is very common for 2-1 to be necessary if the initial 1 is unspecified, as in English (4a)

(4a) My car was stolen.

The network for (4a) is (4a'), in which UN indicates 'unspecified'.

(4a')




In many languages, 'personal' passives such as this are possible only when

initial 1 = UN.

A.2. 3-2 advancement

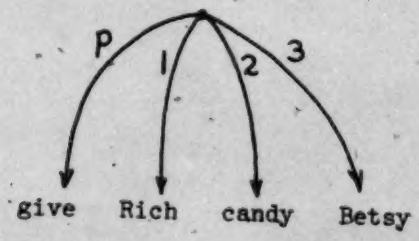
Another very common advancement is that of the network for (6).

(5) Rich gives candy to Betsy.

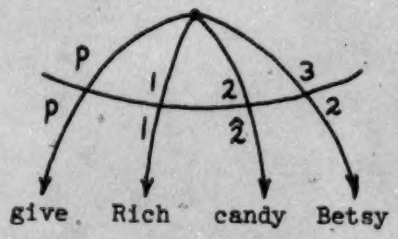
(6) Rich gives Betsy candy.

Comparing the networks for (5) and (6), we see that (6') has one more stratum:

(5')




(6')




The claim here is that Betsy is the final 2 of (6), i.e. that this is a case of 3-2 advancement, and that candy is consequently a $\hat{2}$. As evidence that Betsy is final 2 of (6), we observe that it has three properties of 2's in English:

(a) Betsy immediately follows the verb in (6) (compare the position of candy in (5) ).

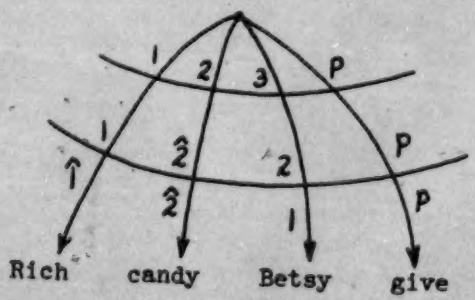
(b) Betsy is not preceded by a preposition in (6).

(c) Betsy can be advanced to 1 as in (7)

(7) Betsy is given candy by Rich.

The network for (7) would be (7'):

(7')



(As evidence that (7) doesn't involve 3-1, rather than 3-2 and 2-1, we can point out that the two-step analysis allows a straightforward explanation why the same verbs that do not allow 3-2 do not have passives in which the initial 3 is final 1. Thus (8) and (9) with reveal are both bad:

(8) *Harry revealed the FBI the facts.
1 2 $\hat{2}$

(9) *The FBI was revealed the facts by Harry.
1 $\hat{2}$ $\uparrow$

The ungrammaticality of (8) and (9) would be unrelated facts in an analysis which said (7) involved 3-1.)

In a language such as Blackfoot, where what we would expect to be a 3, on semantic grounds, is always a 2, we say that 3-2 advancement is obligatory; i.e., Blackfoot does not allow final 3's.[4]

(10) nit-oxkot-awa n-oxko-wa { omi imitaa-yi / that dog-4s ; omi kookowayi / that house }
1-give-direct-3s my-son-3s

*I gave my son that* { *dog* / *house.* }

(11) nit-oxkot-ayini { n-oxko-wa omi imitaa-yi / my-son-3s that dog-4s ; omi imitaayi noxkowa }
1-give-direct-4s

*I gave the dog my son.* (not *I gave the dog to my son.*)

(12) *nit-oxkots-ii'pa omi kookowayi noxkowa
1-give-inan that house my:son:3s

((12) is bad because verb agrees with initial (inanimate) 2.)

3. Oblique advancement

In addition to the term GR's (1, 2, and 3), there are Oblique (Obl) GR's. These include Benefactee, Means, Instrument, Topic[5], Source, Direction, Path, Comitative, Goal, Purpose, Location, Time, and probably others.

Unlike terms, unadvanced obliques never trigger verb agreement, though they may trigger registration of their involvement. Blackfoot, for example, does not mark instrument NP's themselves, but the verb registers the fact that it has them as dependents:

(13) n-omoxt-awayaki-aawa oma imitaa-wa miistsii
1-instr-hit-direct-3s that dog-3s stick

*I hit the dog with a stick.*

Similarly, Location (14) and Direction (15) are registered in the governing verb:

(14) it-aopii-wa amo
loc-sit-3s here

*He's staying here.*

(15) itap-okska'si-wa k-ookowayi
toward-run-3s your-house

*He ran toward your house.*

Obliques are often advanced to termhood. French permits advancement of a Benefactive to 3; compare (16) and (17), both of which translate as *I'll buy a watch for Paula.*

(16) Je vais acheter une montre pour Paule.
I go:1s buy a watch for Paule

(17) Je vais acheter une montre à Paule.
to

That the à in (17) actually marks a 3 and not an Obl, can be seen by comparing (18) in which Paule has been replaced by the clitic pronoun lui:

(18) Je vais lui acheter une montre.

This dative clitic pronoun can be used only for 3's, never for 2's or Obl's.

English has Benefactee advancement, but it must advance to 2:

(19) Patty bought jeans for Don.

(20) *Patty bought jeans to Don.

(21) Patty bought Don jeans.

It is not clear whether we should say that this is a case of Ben-2, or consider this a three-level constraint, Ben-3-2; i.e., that advancement of Ben (via 3) must go all the way to 2.

Another case of Obl advancement is that which is involved in the network for (22):

(22) This bed was slept in by George Washington.

Assuming this sentence has the same initial GR's as (23),

(23) George Washington slept in this bed.

(22) evidently involves a Location advancing to 2 and then 1; i.e., to explain the passive form of (22) we want to posit a stratum in which bed is a 2, even though it cannot be a final 2. So we say that English allows Loc-2-1.[6]

Blackfoot provides a clear case of Direction-2. Compare intransitive (24) with transitive (25):

(24) nits-itap-oo n-itákka-wa
1-toward-go my-friend-3s

*I went toward my friend.*

(25) nits-itap-áaat-a-wa nitákkawa
1-toward-go(trans.)-direct-3s my:friend:3s

(Root -oo- *go* plus transitivizer -at gives -áaat.)

Observe that the verb of (24) agrees only with a 1, while that of (25) agrees with a 1 and a 2, i.e., the initial Obl Direction is final 2 in (25).

B. Retreats

1. <u>Antipassive</u>

Certain logically transitive clauses in many languages exhibit case marking and/or verb inflection normally associated with intransitive clauses in those languages (see Johnson (1976), Heath (1976), and Postal (1977) for discussion). This is most commonly the case when the direct object is either unspecified or non-particular in reference. I illustrate first with Blackfoot.

As indicated in Frantz (1971.22), many Blackfoot verbs which are logically transitive have two stem forms: one which takes the transitive agreement affixes (which reflect person, number, and gender of the 2, as well as person and number of the 1), and another which takes the intransitive affixes (which agree with only the subject in person and number). Compare (1) with (2), and (3) with (4).

(1) nit-oxpommat-a-w om-a ponokaomitaa-wa
1-buy[intrans]-direct-3s that-3s horse-3s

*I bought that horse.*

(2) nit-oxpommaa (ponokaomitaa-i)
1-buy[intrans] horse-non=partic

*I made a (horse-)purchase.*

(3) nit-a'ki-aa-w om-a pokon-a
1-hit[trans]-direct-3s that-3s ball-3s

*I hit that ball.*

(4) nit-a'kiaaki (poko-i)
1-hit[intrans] ball-non=partic

*I hit (no particular ball).*

The verb roots in these examples are typical of the two major subclasses which show this variation. The root oxpomm- of (1) and (2), like dozens of other verbs of Blackfoot, takes transitivizer -at when it has an object which is particular in reference, as in (1). But if no object

is specified, or if the object is non-particular in reference, the verb root takes the intransitive 'theme' ending -aa as in (2). Only slightly less common is the variation in stem shape seen in (3) and (4), where the root evidently takes no 'transitivizer' when transitive, but adds suffix -aaki when no object is specified, or if the object is non-particular as in (4). For both of these types of verbs, I now would say that their intransitive forms are 'antipassive' forms, required when their 2 has lost its termhood by the mechanism of antipassive (2-$\hat{2}$).

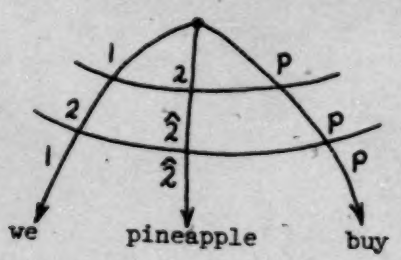
K'ekchi (Mayan) detransitivizes with unspecified or non-particular 2's also. Compare transitive (5) with intransitive (6):[7]

(5) š-Ø-qa-loq' č'op
pst-3-1-:erg-buy pineapple *We bought a particular pineapple.*

(6) š -o: -loq' - o - k (č'op)
pst-1-:abs-buy-antip-non=fut *We bought pineapple.*

Note that in (5) the verb agrees with 1p as an ergative, while in (6) 1p triggers the absolutive verb prefix; furthermore, (6) has the non=future suffix, which occurs only on intransitive verbs. The suffix -o in (6) evidently marks antipassive.

Postal (1977) proposes that antipassive involves 1-2-1, consequently putting the initial 2 en chômage:




While this is controversial, it receives some support in that it makes

possible an explanation for certain reflexives in French and Spanish, as we shall see in F.

Antipassive is not limited to clauses with non-particular or unspecified 2's. As one of four detransitivizing mechanisms, languages utilize it under various syntactic conditions that require intransitivity. For example, orthodox clause union (see E) in many languages requires that the "downstairs" clause be intransitive, and so if that clause is initially transitive this is often remedied by antipassive.

B. 2. Inversion

In Georgian (Harris 1976), there are two basic case-marking patterns, depending upon tense and verb class: A. ergative, nominative, dative. B. nominative, dative, dative. For an A pattern see (7) and for a B pattern see (8).

(7) rezom gačuka samajuri
Rezo:erg 3s:gave:2s:it watch:nom

*Rezo gave you a watch.*

(8) rezo gačukebs samajurs (šen)
Rezo:nom 3s:give:2s:it watch:dat 2s:dat

*Rezo is giving you a watch.*

Despite the difference in case marking, all other evidence indicates that such sentence pairs have the same initial and final GR's.

There is also a third case pattern, governed by the "evidential mode":

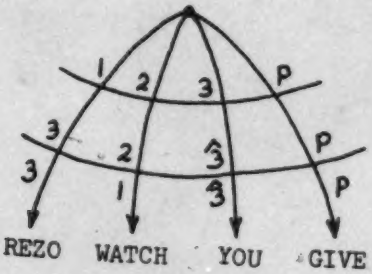
(9) (turme) rezos učukebia samajuri šen-tvis
apparently Rezo:dat 3s:gave:it watch:nom 2s-for

*Apparently Rezo has given you a watch.*

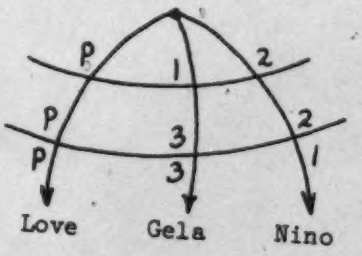
For sentences such as (9), there is evidence that the nominals have the same initial GR's as in (7) and (8),[8] but the final GR's are as follows:

'watch' is 1, Rezo is 3, and second person is a $\hat{3}$. Evidence for the final GR's includes verb agreement and other syntactic rules which make reference to final terms. The network proposed in RG to account for sentence such as (9) is (9'):

(9')




Observe the retreat of the initial 1 to 3, with subsequent 2-1 advancement to satisfy the need for a final 1. This pattern is referred to as inversion. There is good evidence for this same retreat in the networks of psychological predicates of Georgian such as 'love', 'happy', 'remember', etc; i.e., there is evidence that the experiencer of such predicates as 'love' in (10) is an initial 1 and final 3, as shown in the following network:




(10) gelas uqvars nino
Gela:dat 3s:loves:3s Nino:nom

*Gela loves Nino.*

B.3. Direct object retreat (2-3)

Obvious candidates for this retreat are verbs whose patient is a

final 3. This may be the case for so-called "dative direct objects" like that seen in Turkish sentence (11):

(11) Hasan derse başla-dı
Hasan:nom lesson:dat begin-pst

*Hasan began the lesson.*

Other candidates are verbs such as 'harm' and 'resemble' in French which have final 3's rather than 2's:

(12) Vont-ils lui nuire?
go-3p:nom 3s:dat harm

*Will they harm him?*

(13) Je ne lui ressemble pas.
I neg 3s:dat resemble neg

*I don't resemble her.*

Another candidate is the use in Spanish of prepositional phrase (14) or dative pronoun (15) for persons in roles that would be expected to map onto 2's:

(14) Veo a Carlos. *I see Carlos.* [cf. Veo los gatos. *I see the cats.*]

(15) Le mandé a viajar por Europa. *I sent him to travel in Europe.*

C. Replacements.

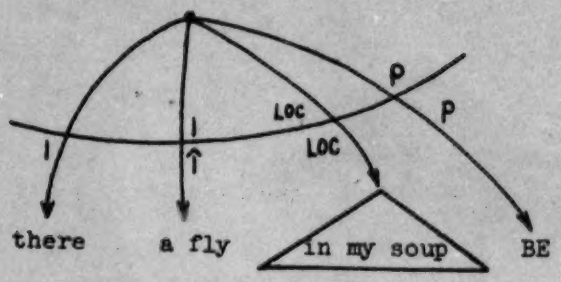
1. Dummies

Under certain ill-defined circumstances involving introduction of a referent to the context and into the awareness, an initial 1 may be put en chomage by dummy there in English. Compare (1) and (2).

(1) A fly is in my soup.

(2) There is a fly in my soup.

The network for (2) is as follows:




The there of (2) has a number of subject properties, among them preverbal position and tag-question copying, as in (3):

(3) There's a fly in my soup, isn't there?

That this copying is a property of subjects can be seen by comparing the pronominal copies of subjects in (4) - (6):

(4) I ate it, didn't I?

(5) You watched me, didn't you?

(6) It walked down, didn't it?

Dummies as 1 lack one important subject property, however. Note that the verb of (7) agrees with the initial 1 rather than with the dummy.

(7) There are flies in my soup.

Probably because dummies do not refer, it is quite common for verbs to agree with the term which a dummy has put en chomage, rather than with the dummy itself. (This chômeur is often referred to as the "brother-in-law" to the dummy.) Alternatively, the verb may agree with nothing and be inflected for the most neutral or "unmarked" category, usually third person singular (inanimate, or neuter, depending upon the gender system). Thus (8) is acceptable in colloquial English; note the third person singular form of the verb be:

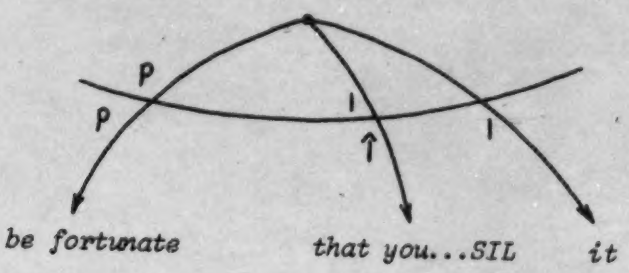
(8) There's flies in my soup.

Clauses, and occasionally proposition-like NP's which are terms, can be put en chomage by dummy it in English. Compare the awkward (9) with (10) (I have enclosed the embedded clauses in brackets.):

(9) [That you came to SIL] is fortunate.

(10) It is fortunate [that you came to SIL].

The network for (10) is as follows:




And it can replace "free relative clauses", as seen in (11):

(11) May it never be forgotten [how bravely he died].

The following may be a case of it as replacer of a 2:

(12) She will regret it that she turned me down.

French inserts il for clauses as 1, as in (13), and occasionally for nouns as 1 for stylistic effect as in (14).

(13) Il est difficile [d'ecrire un tel livre]
*It's difficult to write such a book.*

(14) Il arrive un train.
*There is a train arriving.*

C.2. Anaphors

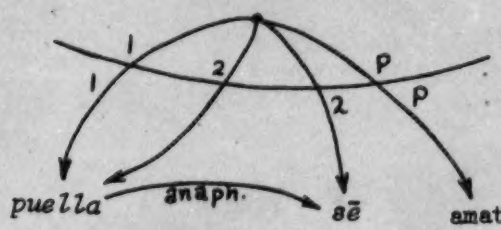
Insertion of anaphoric pronouns is a device which most languages employ to avoid a nominal bearing more than one final relation. Because the nominal which loses a relation still bears another relation, no chomeur results directly from such replacements; i.e., the replacement erases one

of the multiple relations. One such situation is that which commonly leads to use of "reflexive" pronouns such as that in (15) from Latin:

(15) Puella sē amat.
girl:nom refl:3:acc love:3s
*The girl loves herself.*

The network for (15) is (15'). Note that puella bears two initial GR's. The relation of sē to puella is the anaphoric relation. The element which

(15')




governs an anaphoric relation is often referred to as a controller. In Latin, as in most languages, anaphors are inflected for person and number of their controllers.

There are other ways in which languages deal with bivalence such as that in the initial stratum of (15'), and some languages evidently use combinations of options. These will be summarized in appendix 1.

D. Ascensions

Comparing Chichewa (Bantu) sentences (1) and (2), we observe that they differ in two ways. (Trithart 1975).

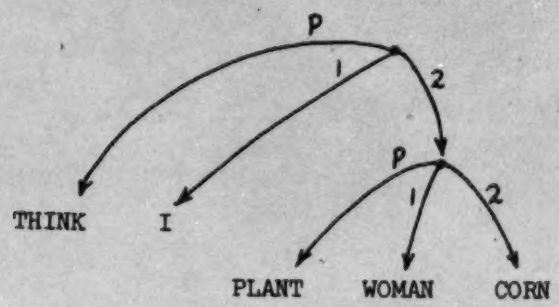
(1) Ndi-ganiza [kuti mkazi a-na-ci-lima cimanga].
1-think comp woman 3s-pst-3s-plant corn

(2) Ndi-m-ganiza mkazi [kuti anacilima cimanga].
1-3s-think woman comp

Both (1) and (2) translate as *I think the woman planted the corn.* In (1) the verb of the embedded clause (in brackets) agrees with its 1 and 2,

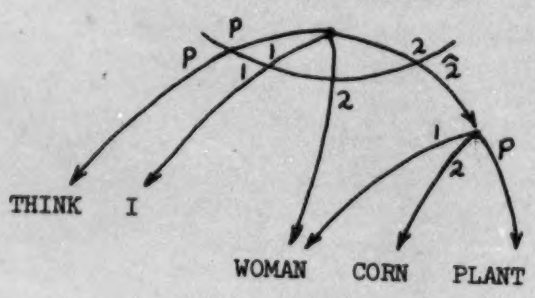
while the matrix verb agrees with its 1. The network for (1) is (1'):

(1')




In (2), not only does the embedded or "downstairs" (ds) verb agree with *woman* and *corn*, but the "upstairs" (us) verb agrees with *woman* as a 2. Evidently *woman* bears a final relation to the us verb; i.e., the final stratum for *think* has *woman* as its 2; see network (2'):

(2')



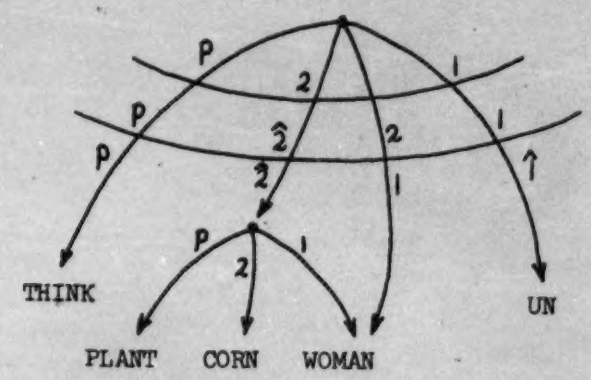

The position of mkazi *woman* in (2) is not surprising; normal Chichewa linearization puts 1's before, and 2's after, their governors. When a nominal bears final GR's to two verbs, languages usually place that nominal in the earliest of two possible positions; and since the us verb precedes the ds verb in Chichewa, mkazi appears following the us verb in the position expected for 2's of that verb.

As further evidence that *woman* bears the 2 relation to *think* in (2), observe that *woman* can advance to 1 as in (3):

(3) Mkazi a-na-ganiz-wa [kuti anacilima cimanga].
woman 3s-pst-think-pass
*The woman was thought to have planted the corn.*

The network for (3) is (3'):'

(3')




The existence of (3) is interpreted as evidence for the correctness of (2') as the network for (2), according to the following line of reasoning:

a. (3) has passive verbal morphology, and *woman* is evidently final subject of *think*.

b. Since the universal rule for passive is 2-1, then there must exist a stratum in the network for (3) which has *woman* as 2 of *think*

c. On the basis of the meaning of (1) - (3), we assume that *woman* bears no initial GR to *think*, so woman must bear the 2 relation to *think* in the next-to-final stratum of (3').

d. The existence of the next-to-final stratum of (3') supports the claim that such a stratum is part of the network for (2).

Of course, the existence of (2) can be seen to support the choice of networks for (3). So actually the analyses of (2) and (3), as reflected in (2') and (3'), are mutually supportive.

Network (2') illustrates a very common sanction, which we will refer

to as 1-ascension. Because in many languages this ascension is limited, in the clearest cases, to ds 1's, it can serve as a test for 1's in those languages. For example, Micmac sentence (5) indicates that 1-ascension is possible with us verb *want* (compare (4) ), while (6) indicates that 2-ascension is not sanctioned with us verb *want*:[9]

(4) pua:tɨm-ø nekɨm pɨma:l-nin
want (TI)-1s 3s carry-2s
*I want him to carry you.*

(5) pua:l-k (nekɨm) pɨma:l-nin
want (TA)-1s:3s 3s carry-2s
*I want him to carry you.*

(6) *pua:l-ul nekɨm pɨma:l-nin
want (TA) -1s:2s 3s carry-2s

In (4), the matrix verb has the stem which occurs with inanimate gender 2's, the transitive inanimate (TI) stem; while in (5) the matrix is a transitive animate (TA) stem, inflected to agree with both first person subject and animate third person object, the latter being also the initial ds 1. Thus (5) involves 1-ascension. However, a corresponding 2-ascension would give (6), which is unacceptable. These facts can be used to test the status of a putative 1 by embedding the clause to be tested as a dependent of *want*. Thus to determine if a clause such as (7) is truly passive, we can embed it as in (8). If the initial 2 of *carry* is a final ds 1, then it should be able to bear a 2 relation to *want* as well, as in (9). Thus the fact that (9) is a good sentence supports the claim that the network for (7) involves 2-1.

(7) pema:l-uksi-n
carry(TA)-pass-2s

*You are carried.*

(8) pua:tɨm-ø ki:l pɨma:l-uksi-n
want(TI)-1s 2s carry-pass-sub
*I want you to be carried.*

(9) pua:l-ul p‡ma:l-uksi-n
want (TA)-ls:2s carry-pass-sub

*I want you to be carried.*

Blackfoot, while related to Micmac, is much more liberal in the ascensions it allows (Frantz 1974). Thus ascension of just about any dependent of the ds verb is possible. (10) exhibits 1-ascension, (11) shows 2-ascension, (12) instrument ascension, and (13) directional ascension. Surprisingly, even one member of a conjoined pair can ascend, as (14) shows. ('Tr' indicates the verb stem is transitive.)

(10) nits-iksstat-a-wa n-oxko-wa m-áxk-akomimm-axsi k-itan-i
1-want(Tr)-direct-3s my-son-3s 3-might-love-4s your-daughter-4s

*I want my son to love your daughter.*

(11) nits-iksstat-a-yini k-itan-i m-áxk-akomimm-axsi n-oxko-wa
1-want(Tr)-direct-4s your-daughter-4s 3-might-love-4s my-son-3s

[*paraphrase of (10)*]

(12) nit-aiksim'sstat-ooxpi omiistsi miistsi-istsi k-áxk-oxt-awaayaki-ooxsi
1-think(Tr)-inan.pl those stick-pl 2-might-instr-hit-ls:2s

*I expect to hit you with those sticks.*

(13) kit-iksstat-o n-oxko-wa m-axe-itap-aapiksist-axsi (kiistoyi)
2-want(Tr)-ls:2s my-son-3s 3-might-toward-throw-4s 2s

omi pokon-i
that ball-4s

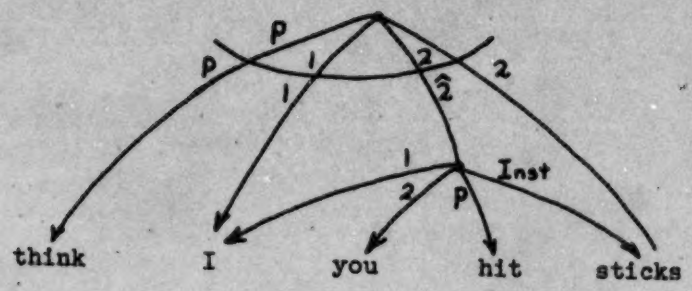
*I want my son to throw the ball toward/to you.*

(14) nits-iksstat-a-wa n-oxko-wa nits-oy'-ssinnaani
1-want(Tr)-direct-3s my-son-3 1-eat-1p

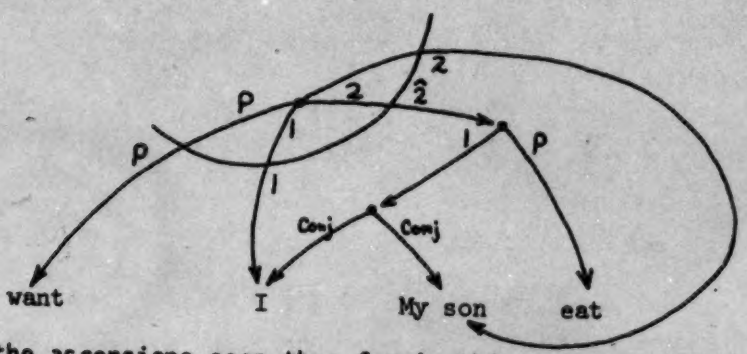
*I want my son and I to eat.*

Networks for (12) and (14) are as follows:

(12')




(14')




In all of the ascensions seen thus far in this section, the 'ascendee' took on the direct object relation to the matrix verb. The next example from Blackfoot illustrates an ascendee that takes on the subject relation:[10]

(15) iksipisata'pi-wa n-oko's-iksi ot-áyo'kaa-xsaawa
amazing(II)-3s my-offspring-pl 3-sleep- p

*It's amazing that my kids are sleeping.*

(16) iksipisata'pss-i n-oko's-iksi ot-áyo'kaa-xsaawa
amazing (AI)-3p my-offspring-3p 3-sleep-3p

[*paraphrase of (15)*]

In (15), the ds clause is inanimate subject of the intransitive matrix verb, while in (16), animate third person plural is subject of 'amazing'. (The change in the stem is required when 'amazing' has an animate subject.) The network for (16) is (16'):[11]

(16')

Comparing (16') with network (2') we see that an ascendee from a 1 takes on the 1 relation upstairs, while an ascendee from a 2 takes on the 2 relation upstairs. Referring to the ds clause as the host to an ascension, we state this generalization about ascensions as the Relational Succession Law, which is, roughly: An ascendee bears the relation of the host. Of course the host is consequently en chomage.

There is a semantic class of verbs which, like English tough, difficult, easy, impossible, etc., govern ascension of non-subjects. In English this rule is quite liberal, but in many languages, such as Micmac, only ds 2's can bear the additional relation to this class of us verbs. (17) - (19) illustrate the sanction in English:

(17) Sanctions are easy to find.
(cf. *To find sanctions is easy.*)

(18) This subject is hard to deal with.
(cf. *To deal with this subject is hard.*)

(19) Some topics are impossible to avoid wanting to skip over.
(cf. *To avoid wanting to skip over some topics is impossible.*)

Only 2's can ascend to verbs of the 'tough' class in Micmac, as we see in (20) - (24). But (25) shows that the 2 need not be the final ds 2; 'you' in (25) is the final ds 1 of a passive verb, but it is the initial 2 of that verb.

(20)

| naqɨmase:-k | ukcit | ni:n | pɨma:l-nin |
|---|---|---|---|
| easy-3s | for | 1s | carry-2s |

*It's easy for me to carry you.*

(21) naqɨmase:-n ukcit ni:n pɨma:l-nin
easy-2s for 1s carry-2s

*You are easy for me to carry.*

(22) * naqɨmase:-y (ukcit ni:n) pɨma:l-nin
easy-1s for 1s carry-2s

(23) naqɨmase:-k ukcit ni:n kaniewɨn
easy-3s for 1s win-sub

*It's easy for me to win.*

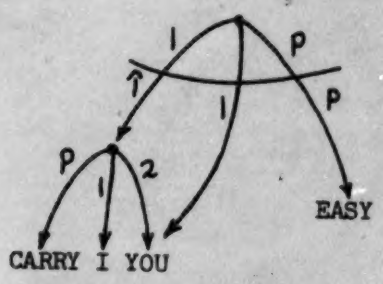
(24) * naqɨmase:-y (ukcit ni:n) kaniewɨn
easy-1s

(25) naqɨmase:-n pɨma:l-uksi-n
easy-2s carry-pass-sub

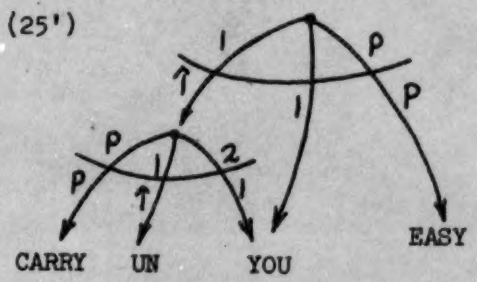
*You are easy to carry.*

The networks for (21) and (25) are (21') and (25'):

(21')




(25')




Observe that (25') does not violate the constraint that only 2's ascend with matrix verbs of the 'tough' class, for the constraint does not specify that the ascendees must be <u>final</u> ds 2's. In fact, the constraint on Micmac 2-ascension would have to be more complicated, i.e. less general, if it were necessary to rule out network (25').

Thus far we have looked at ascensions in which the host is a clause. There are also ascensions with non-clausal hosts, i.e. sentences in which the dependent of a nominal bears a non-initial relation to the governor of that nominal. The most common of such ascensions is 'possessor ascension'.

There are at least two varieties.

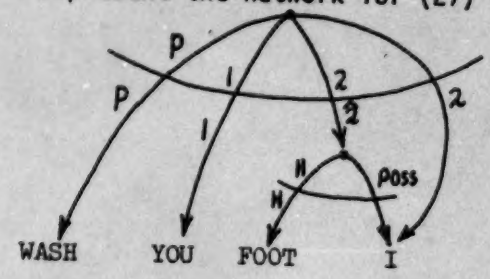
In the first type, the ascended possessor takes on the relation of its host, putting the host en chomage. This type is evidently limited to absolutive hosts.

Compare Stoney (Siouan) sentences (26) and (27):

(26) ma-thiha n-uzazach — *You washed my foot.*
my-foot 2s-wash

(27) thiha ma-n-uzazach — *You washed my foot.*
foot 1s-2s-wash

We can account for the paraphrase relation of these two sentences, as well as their structural differences, by saying that (27) involves ascension of the possessor; i.e. the possessor of the initial 2 ('foot') has taken on the 2 relation. Being noncommittal about the GR's internal to the nominal 'my foot', we can represent the network for (27) as follows:[12]




Blackfoot sentences (28) and (29) also seem to differ in that in (29) the initial possessor is also final 2.

(28) Nit-ssiksiihp -a oma ninaawa o'kakini.
I -break(TI) -3s that man his:back

*I broke the man's back.*

(29) Nit-ssik-o'kakin-a-wa oma ninaawa.
I -break- back -direct-3s that man

*I broke the man's back.*
(More literally, *I back-broke the man.*)

In (28), the verb has a final inanimate 2, as one can tell by its form.

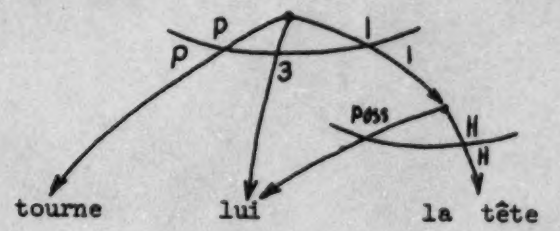
In (29), the verb has 'man' as final 2, and 'back' is incorporated. (Evidently, Blackfoot nouns put en chomage by possessor ascension are necessarily incorporated.[13]

In the second type of possessor ascension, the ascendee is a (non-initial) 3 in the clause, so the ascension does not put the host en chomage. French sentence (31), a paraphrase of (30), illustrates this transition; both sentences translate as *his head is spinning.*

(30) Sa tête tourne.
his head spins

(31) La tête lui tourne.
the head 3s:dat spins

The GR's of (31) are as follows:




Blackfoot evidently has this type of possessor ascension as well. Compare (32) with (28):

(32) Nit-ssiksissto-a-wa oma ninaawa o'kakini.
1 -break (TA)-direct-3s that man his:back

*I broke the man's back!*

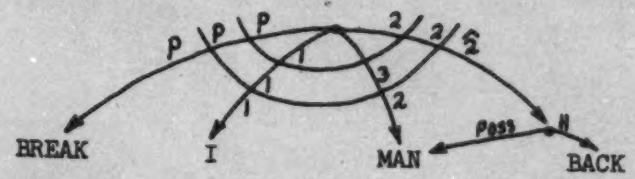
In (32), the verb stem includes an extension -o common to cases of Benefactee and 3 advancement; cf. (33) and (34):

(33) Nitohpommaa imitai. *I bought a dog.*

(34) Nitohpommoawa imitai. *I bought him a dog.*

The presence of this -o in (32), as well as the fact that 'back' is not incorporated, can be accounted for if (32) involves ascension of a

possessor to 3, plus 3-2 advancement:




Another common phenomenon which may involve an ascension has been referred to as "quantifier floating" in transformational grammar literature. This is exemplified in English example (36); compare (35):

(35) All (of) the students can understand.

(36) The students can all understand.

Assuming that all is the head of the 1 in (35), then (36) can be viewed as involving an ascension of the students to take on the 1 GR.

Finally, it may be that some 'comitatives' are to be explained as the consequence of ascension of one member of a conjunct. Thus the fact that converged in (40) can have a singular final 1 could be explained by saying that it's initial 1 is plural (as in (39)):

(37) * The tanker converged.

(38) The tankers converged.

(39) The tanker and the destroyer converged.

(40) The tanker converged with the destroyer.

E. Unions

1. Orthodox clause union (OCU)

Consider the following Turkish sentences (most are from Aissen 1974):

(1) Hasan öl-dü.
H. die-pst

*Hasan died*

(2) Mehmet Hasan-ı ö-dür-dü
M. H.-accus die-cause-pst

*M. killed H.*

(3) Kasap et-i kesti.
butcher meat-accus cut

*The butcher cut the meat.*

(4) Hasan kasab-a et-i kes-tir-di.
H. butcher-dat meat-accus cut-caus-pst

*H. had the butcher cut the meat.*

Comparing (1) and (2), we see an obvious relationship; the verb of (2) is the causative of (1). The semantic roles evident in the translation of (2) suggest that Hasan is initial 1 of a predicate die, though final 2 of the clause, and Mehmet is initial and final 1 of a verb cause. And comparison of (3)) and (4) plus consideration of semantic roles suggests that *the butcher* of (4)) is initial 1 of cut, though final 3 (dative case marks 3's in Turkish) of the clause.

Causative clauses such as (2) and (4)) in Turkish, as well as parallel clauses in numerous other languages, are accounted for in RG by a universal rule of "clause union", which I will here designate 'orthodox clause union' (OCU) to keep it distinct from other types. Perlmutter and Postal propose the following as an informal statement of OCU:

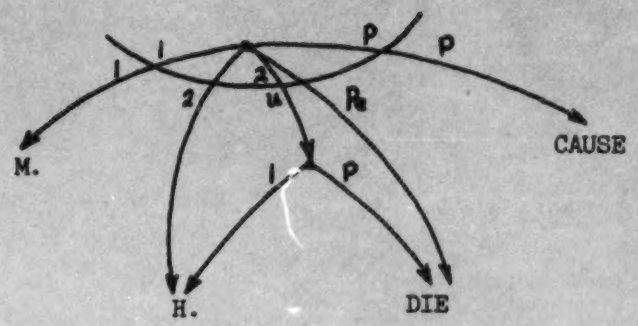
a. final ds ergative is 3 of CAUSE

b. final ds absolutive is 2 of CAUSE

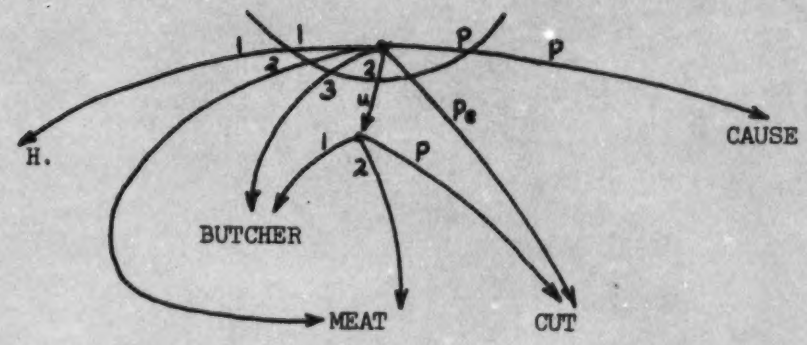
c. all other ds dependents, including the ds P, bear relation R-emeritus ($R_e$) to CAUSE, where R is their final ds relation.

The partial networks for (2) and (4) are (2') and (4'):

(2')




(4')




Nominals bearing emeritus relations are generally marked the same as their non-emeritus counter-parts. So the initial ds 3 of (5) is dative case, even though this results in two nominals with the same case marking.

(5) Mehmet kız-a kitab-ı Ali-ye verdi-ti-ti.
M. girl-dat book-accus A.-dat give-cause-pst

*M. had the girl give the book to Ali.*

But as we shall see below for French, 3's and $3_e$'s are differentiated by other (than case marking) rules.

To show that it is final ds relations that OCU is sensitive to, consider Turkish (6) and Blackfoot (7).

(6) Hasan-ı derse başla-t-tım
H.-accus lesson:dat begin-cause-pst-1s

*I had Hasan begin the lesson.*

(6) is the causative counterpart of (1) seen in III.B.3 as a possible example of 2-3 retreat. If the 2-3 analysis there was correct, then OCU treats this nominal on the basis of its final ds relation, so that it is a $3_e$ in (6). (The fact that Hasan is a 2 (accusative case) in (6) also supports the hypothesis that (1) was intransitive.)

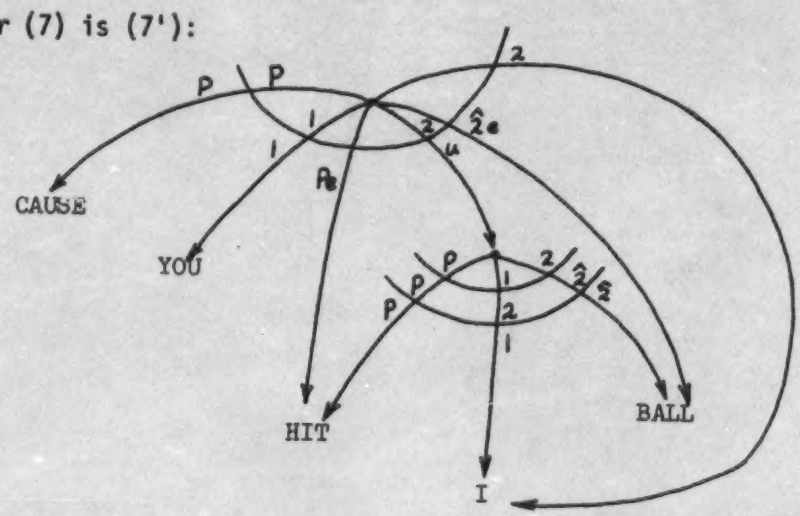
Blackfoot, like some other languages, requires that a ds clause of an OCU be intransitive. So if a ds clause is initially transitive, Blackfoot rectifies this by antipassive. Thus, the stem to which the root 'cause' is added in (7) is the "antipassive" stem (seen in III.B.1), even though the initial ds 2 is particular in reference:

(7) kit-a'kiaaki-átts-ooki om-a pokon-a.
2-hit [intrans]-cause-2s:1s that-3s ball-3s

*You made me hit the ball.*

The network for (7) is (7'):

(7')




In the causative examples we have seen thus far, the $P_e$ is morphologically attached to the causative root. Data from French show that this is not a universal: (Discussion based on lectures by D. Perlmutter, 1975.)

| | | | | | | |
|---|---|---|---|---|---|---|
| (8) | Je | laisserai | Jean | boire. | | |
| | I | let:fut | J. | drink | | |
| (9) | Je | laisserai | boire | Jean. | | |
| | Is | let:fut | drink | J. | | |
| (10) | Je | laisserai | Jean | boire | le | vin. |
| | Is | let:fut | J. | drink | the | wine |
| (11) | Je | laisserai | boire | le | vin à | Jean. |
| | Is | let:fut | drink | the | wine to | J. |

Examples (8) and (10) are not clause unions, while (9) and (11) are. We first compare (8) and (9). In both of these Jean is final 2, but for different reasons. In (8) there is no OCU; Jean is final 2 of let as a result of 1-ascension (see III-D), and drink is an infinitive as a result of equi-erasure (see IV). But in (9), Jean is final 2 of laisserai according to the universal rule of OCU, and drink is an infinitive because it is a $P_e$. The position of boire in (9) is dictated by its $P_e$ status; i.e., even though the $P_e$ is still a separate word, it is closely linked with its governing P, and hence the final 2 (Jean) follows the $P + P_e$ complex.

Comparing (10) and (11), we see even greater differences. In (10) Jean is final 2 and boire is an infinitive for the same reasons stated above with regard to (8). But in (11) Jean is marked by PP à as a final 3 as predicted by OCU. And as in (10), the $P_e$ can have no dependents. Another factor that differentiates $P_e$'s from P's in French is potential for negation. In single-verb clauses, negation is accomplished by ne... pas flanking the verb, as in (12):

(12) Jean ne dort pas.
J. neg. sleep:3s neg

*John is not sleeping.*

If an infinitive is not a $P_e$, it can be negated by placing both ne and pas before it. Thus non-union examples (8) and 10) both have two possible negations, as seen in (13) - (16), for they each involve two final clauses:

(13) Je ne laisserai pas Jean boire.

*I won't let John drink.*

(14) Je laisserai Jean ne pas boire.

*I'll let John not drink.*

(15) Je ne laisserai pas Jean boire de vin.

*I won't let John drink the wine.*

(16) Je laisserai Jean ne pas boire de vin.

*I'll let John not drink the wine.*

(13 involves negation of the us clause of (8), while (14) involves negation of the ds clause of (8). (15) involves negation of the us clause of (10), and (16) involves negation of the ds clause of (10). But OCU examples (9) and (11) do not allow negation of the $P_e$; they involve only one final clause, as seen in (17)-(20):

(17) Je ne laisserai pas boire Jean.

(18) *Je laisserai ne pas boire Jean.

(19) Je ne laisserai pas boire de vin à Jean.

(20) *Je laisserai ne pas boire de vin à Jean.

There is still further evidence that supports a difference in status of *boire* in (10) versus boire in (11). If the initial ds 2 le vin is replaced by a pronoun, it cliticizes to different verbs in these examples:[14]

(21) Je laisserai Jean le boire.
*I will let John drink it.*

(22) Je le laisserai boire à Jean.
*I will let John drink it.*

(23) *Je laisserai le boire à Jean.

In (21), like (10), there is no OCU and so the initial ds 2 is still a dependent of boire; hence, the clitic pronoun le precedes boire.(22), on the other hand, involves OCU so boire is a $P_e$ and can have no dependents; thus the initial ds 2 is final 2 of the causative verb and precedes it. (23) shows that the clitic cannot be adjacent to $P_e$ boire.

Before leaving the French examples of OCU, we will show that rules of grammar must be able to distinguish emeritus terms from their non-emeritus counterparts even if they are identically marked. In II.A. we illustrated the fact that lui is the clitic pronoun for 3's in French. Here are some non-causative examples:

(24) Paul lui donnera le livre.
P. 3:dat give:fut the book
*Paul will give the book to him.*

(25) Paul lui téléphonera.
*Paul will telephone him.*

Substituting a pronoun for the initial ds ergative of (11) we find that it acts the same as other final 3's:

(26) Je lui laisserai boire le vin.

But according to the rule of OCU, an initial ds 3 will be a final $3_e$. So in (27) à Jean is a final $3_e$, not a 3:

(27) Je laisserai téléphoner Paul à Jean.
*I'll let Paul telephone John.*

And the clitic lui cannot replace *à Jean:*

(28) *Je lui laisserai téléphoner Paul.

If the initial ds clause of an OCU has both a 2 and a 3, the sentence would contain two nominals marked by à, as in (29):

(29)* Je laisserai donner le livre á Paul á Jean.

*I will let (?) give the book to (?).*

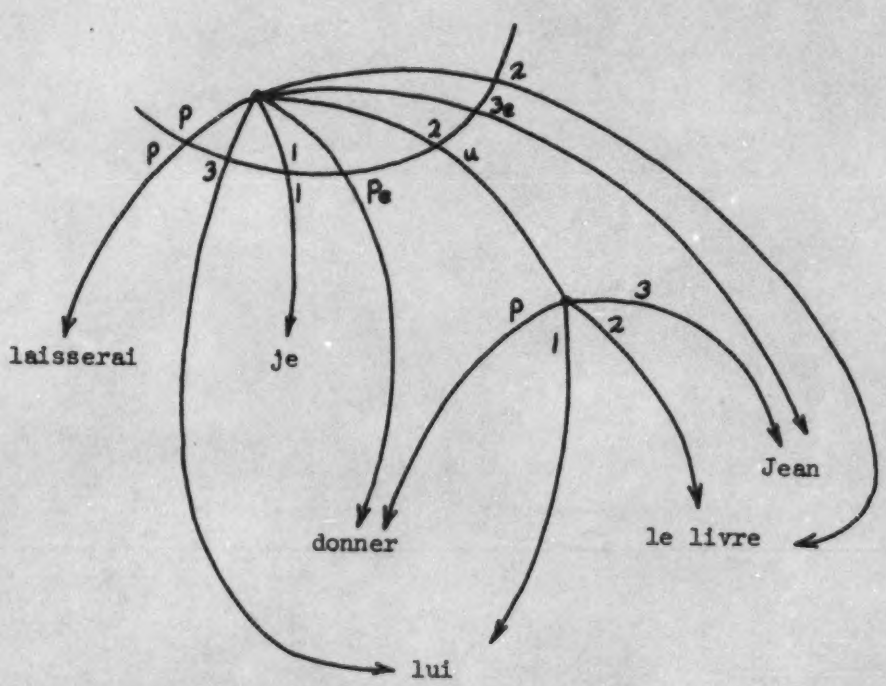
This sentence is not acceptable, presumably because there is no way to tell which PP is the 3 and which the $3_e$. But if we substitute lui for the initial ds ergative, the sentence is acceptable and unambiguous, because lui can only be final 3, not $3_e$:

(30) Je lui laisserai donner le livre à Jean.

*I will let him give the book to Jean.*

The network for (30) is (30'):

(30')



E.2 Equi-subject clause union (ESU)

Consider the following Micmac sentences (courtesy of Watson Williams):

(31) pua:tɨm-ø ki:l pɨma:l-an
want(TI)-1s 2s carry-3s

*I want you to carry him.*[15]

(32) pua:tɨm-ø nekɨm pɨma:l-nin
want(TI)-1s 3s carry(TA)-2s

*I want him to carry you.*

(33)? pua:tɨm-ø ni:l pɨma:l-nin
want (TI)-1s 1s carry(TA)-2s

*I want to carry you.*

(34) ketu-pma:l-ul (ki:l)
want-carry(TA)-1s:2s 2s

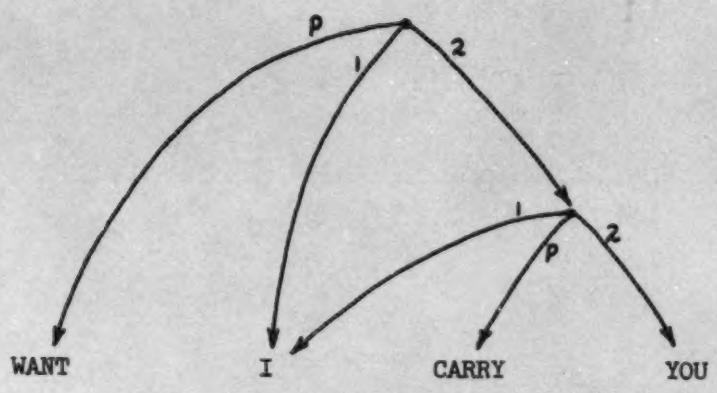
*I want to carry you.*

(35) ketu-pma:l-k
want-carry(TA)-1s:3s

*I want to carry him.*
*(*He wants me to carry him.)*

Examples (31) - (33) clearly involve two clauses each, with two inflected verbs. (34), a paraphrase of the somewhat unnatural (33), exhibits a single clause. The verb is made up of two roots: ketu- want and p(ɨ)ma:l carry. Viewing these roots as two initial verbs, the glosses under (34) and (35) make it clear that ketu- requires its subject to be the same as the subject of the verb to which it is attached. We assume that network (34') shows the initial relations of (34):

(34')




Just in case the two clauses involved share a 1 (as in (34')), another type of union, Equi-subject clause union (ESU) is possible.[16] This type of clause union is not as well understood as OCU. Frantz (1976) suggests that languages may differ as to whether the us or ds predicate is the final governor in an ESU. Thus he proposed that in Micmac ESU's the us verb is a final $P_e$. However, this is difficult to test when the two verb roots make up one stem. Languages do seem to differ according to whether or not ds dependents (other than the ds 1, of course) are "live" or emeritus dependents in the ESU, as we shall see.

Spanish exhibits ESU, as Aissen and Perlmutter (1976) show. Consider the following sentences:

(36) Luis quiere comer las tortillas.
L. want:3s eat the t.

(37) Luis quiere comer-las.
L. want:3s eat:-3p:fem

(38) Luis las quiere comer.

*Luis wants to eat them.*

As we saw earlier for French (III.E.1), Spanish pronouns cliticize to the verb of which they are final dependents. Thus the position of the clitic

las in (38) would be consonant with a claim that (38) is a single clause, whereas (37) consists of two clauses.[17] The ESU hypothesis is further supported in comparison of (39) - (42):

(39) Quiero mostrár-te-los.
want:1 show-2s-3p

*I want to show them to you.*

(40) Te los quiero mostrar.

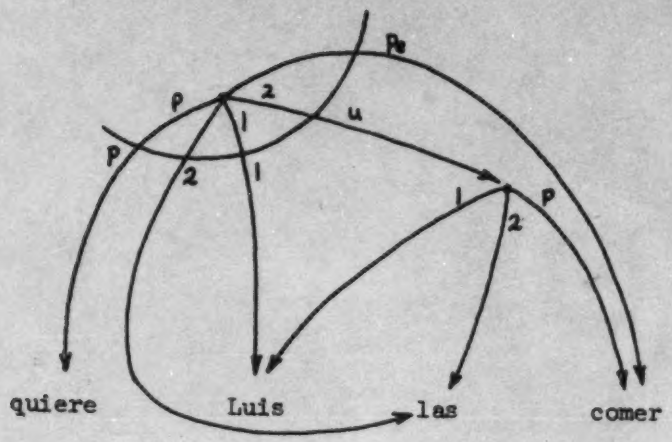
*I want to show them to you.*

(41) *Te quiero mostrarlos.

(42) *Los quiero mostrarte.

We see that the two initial ds pronouns can attach either to the ds verb (no ESU) or to the us verb (ESU). But (41) and (42) show that both clitics must be on the same verb; this is evidence against an ascension analysis, for one would expect it to be possible (indeed, necessary), for no more than one clitic to ascend. The ESU analysis, on the other hand, predicts that both clitics have to be on the same verb in (39) and (40). (Aissen and Perlmutter (1976) give several arguments that the initial ds dependents are final dependents of the us verb in sentences such as (40). Rather than repeat them here, I refer the reader to their paper.) So in contrast to ESU in Micmac, the verbs in Spanish ESU's remain separate words, and it is clear that the ds verb is a $P_e$ in Spanish ESU's, for it can have no dependents. Thus the network for (38) would be as follows:

(38')

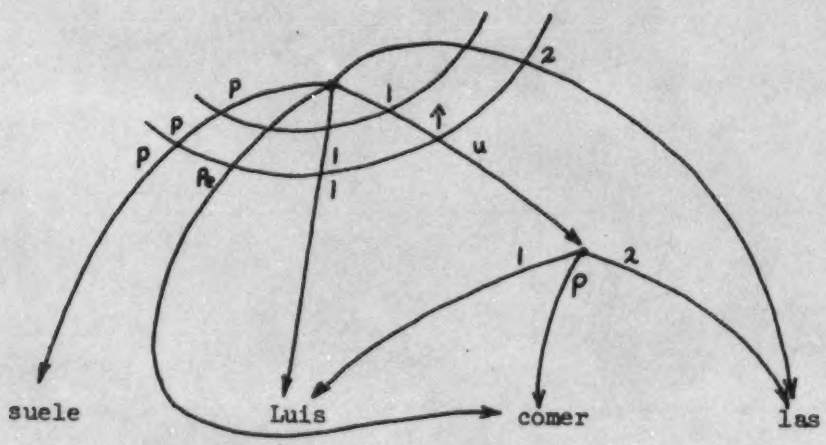



Evidently the equi-subject condition for ESU can be met by an ascension in both Spanish and Micmac. Assuming that soler tend takes a clause as initial 1, (43) involves both 1-ascension and ESU, as shown in network (43'):

(43) Luis las suele comer.
L. they:fem tend:3s eat

*Luis tends to eat them.*

(43')

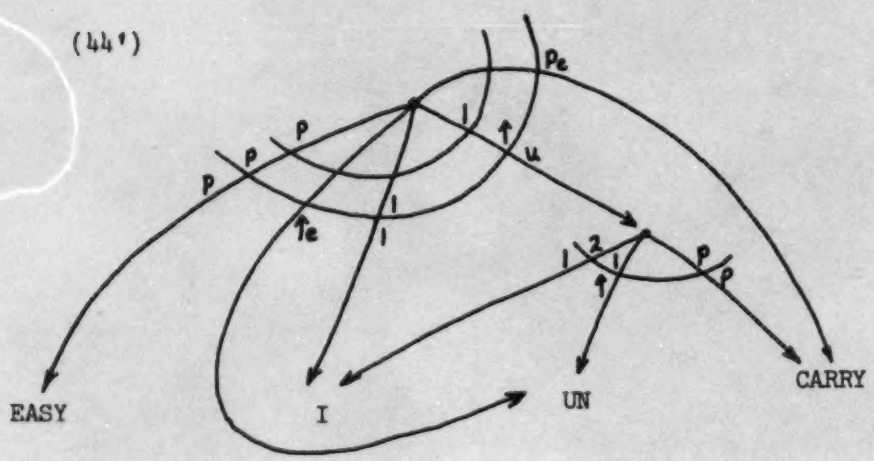


Micmac (44) evidently involves ds passive, (initial) 2-ascension (cf. (25) of III.D), and ESU; as shown in (44'):

(44) naqɨmasɨ-pma:l-uksi-ø
easy-carry-pass-1s

*I'm easily carried.*

(44')



Capanahua [18], when contrasted with Micmac and Spanish, shows us that languages differ in the status of ds dependents in ESU's. Consider (45) - (50), all of which (except the unacceptable sentences) translate as *I want to eat you.*

(45) [mia pi-ti] ta' 'en keena-i
2s eat-sub decl 1s want-pres

(46) 'ea ta' 'en [mia piti] keenai
1s decl 1s 2s eat want

(47) *mia ta' 'en [piti] keenai
2s decl 1s eat want

(48) *'ean ta' 'en [mia piti] keenai
1s:erg decl 1s 2s eat want

(49) 'ea ta' 'en mia pi-kaci'k-i
1s decl 1s 2s eat-want-pres

(50) mia ta' 'en pi-kaci'ki
2s decl 1s eat-want

An important fact about Capanahua is that one and only one matrix clause constituent can bear linear precedence to the declarative mood marker ta'. This position indicates an overlay relation of "focus". In (45) the ds clause (in brackets) is in this position, while in (46) the us 1 is in focus. However, when a nominal is both matrix 1 and in focus, a pronoun is inserted to bear one of these relations. Furthermore, the shape of the pronoun which is placed in the pre-ta' position reflects ergativity of the 1. For first person, the ergative pronoun is 'ean and the non-ergative pronoun is 'ea. The use of 'ea in (46) shows that complements of *want* in Capanahua are not final 2's, or else the ergative pronoun would have appeared in (46). (47) and (48) show that a constituent of the ds clause cannot be in focus; in (47) the ds 2 is placed before ta' while the ergative pronoun 'ean of (48) could only reflect the transitivity of the ds

clause. All the discussion of Capanahua to this point serves as background for discussion of (49) and (50). In (49), there is but one complex verb, made up of pi *eat* and kaci'k, an allomorph of *want*. Thus we suspect clause union, specifically ESU. This is supported in that in (50) what is an initial ds dependent, mia *you*, bears the focus overlay, indicating that it is a constituent of a main clause in (50). Looking again at (49), we note that the pronoun in focus position is non-ergative in form, suggesting that even though the initial ds 2 mia is a dependent in the union, it is not a final 2; it must, then, be a $2_e$. Loos (personal communication) says that there is other evidence for the intransitivity of (49) and (50) in the type of verb markings possible. So in Capanahua, as opposed to Spanish and Micmac, the ds 2 of an ESU is not a final term.[19]

In summary, then, ESU requires the same nominal to be both ds and us 1. In the resultant union, one verb is a $P_e$ and a dependent of the other verb; the former dependents of the $P_e$ are union dependents of the live P in the union. It may be that languages differ as to whether the us or ds verb remains live. Languages definitely differ as to whether the ds dependents are all emeritus in the union or not (in Spanish and Micmac, they are not, but in Capanahua they are).[20] Languages also differ as to whether the $P_e$ is attached to the live verb or not.

E.3. Adverbial clause union (ACU)

Consider the following Central Ojibwa sentence (from Rich Rhodes):

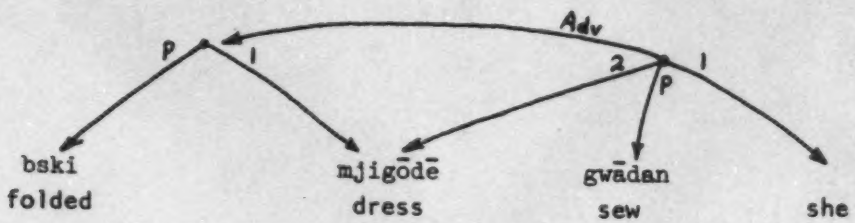
(51) W-gĪ-bski-gwād-an mjigōdē.
3-pst-folded-sew-3s dress

*She hemmed the dress.*

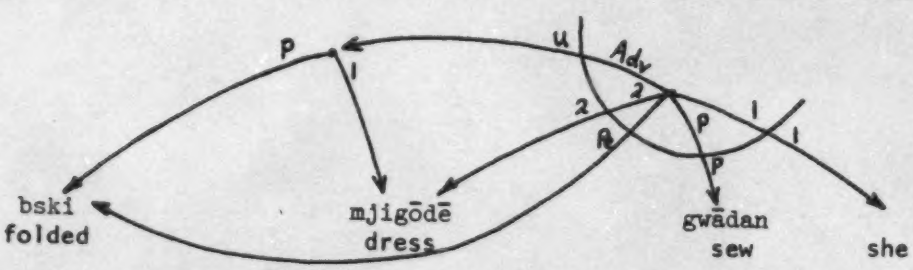
While there is but one final clause in (51), observe that it involves

two predications: one about sewing the dress, and another saying that the dress was in a folded state during the sewing. I suggest that the initial relations of (51) are similar to those of the following English sentence: *The dress being folded, she sewed it.* That is, I suggest there are two initial clauses, one being adverbial:

(51')




Of course, if this is correct we must account for the fact that there is only one surface clause. The mechanism I propose is ACU, in which the predicate of the adverbial clause is a Pe of the matrix clause. The major constraint on ACU is that the 1 of the adverbial clause must be identical to either the 1 or the 2 of the matrix clause; i.e., the 1 arc of the adverbial clause must share a head with either the 1 or 2 arc of the matrix clause. Thus the network for (51) would be as follows:




Many of the "preverbs" of Algonkian languages could be accounted for with ACU; for example, the Blackfoot preverb iito- *go*; which requires that its initial 1 be the same as the matrix 1:

(52) Nits-iito-omiihkaa. *I went fishing.*
1 - go - fish

(53) kits-iito-ovato'p-i omistsska miinistsska.
2 - go -eat(TI)-3p those berries

*I went and ate those berries.*

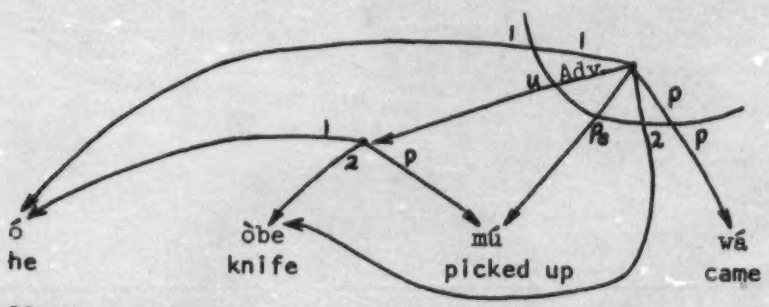
ACU may be the best way to account for some so-called serial verb constructions. Compare the following Yoruba sentences:

(54) ó wá *he came*

(55) ó mú òbe *he picked up a knife*

(56) ó mú òbe wá *he brought a knife*

The following network for (55) seems plausible:

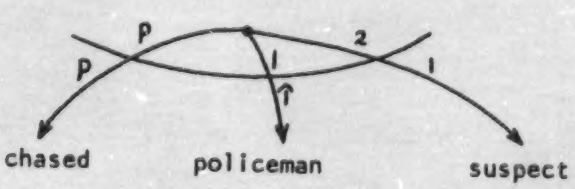



(Note the following paraphrase of the translation: *Picking up a knife, he came.*)

F. Non-erasing advancements

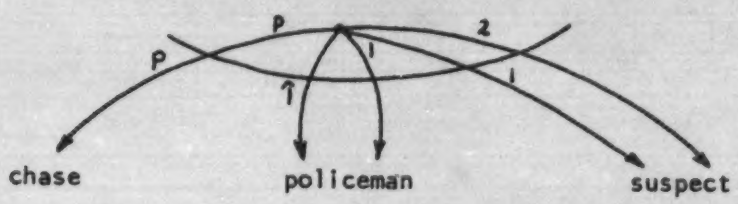
In every example of an advancement illustrated in A, the advancee "ceases" to bear the lower ranked relation in the stratum in which it bears the higher ranked relation. This made it possible to draw a single arc to the advancee, dividing it into stratal sections, as in (1'), repeated here as (1):

(1)



Had we drawn separate arcs for the multiple relations born by suspect and policeman, the diagram would look as follows:

(2)



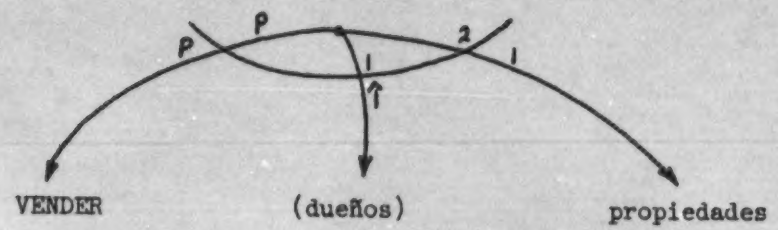

In the arc pair networks of Johnson and Postal (to appear), the arcs which are labelled in the second stratum of (2) are said to bear the Erase relation to those which are labelled in the initial stratum of (2). So we may speak of the 1-arc (with suspect as head) as 'erasing' the 2-arc of (2). (Of course, the chomeur condition requires that the $\hat{1}$-arc erase the initial 1 arc.)

Now, there are otherwise anomalous linguistic phenomena which can be accounted for by recognizing the existence of advancements in which the advancement does not erase the arc which is labelled in the preceding stratum. The "reflexive passive" of Spanish (and many other languages) is an example. In addition to non-reflexive passives such as (3), Spanish exhibits sentences such as (4):

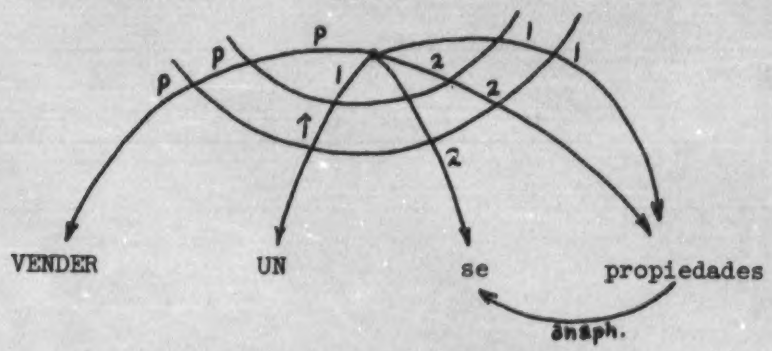
| | | | |
|---|---|---|---|
| (3) | Las propiedades fueron | vendidas | (por los dueños). |
| | the properties were:pl | sold:ppl:pl | by the owners |
| (4) | Las propiedades se | vendieron | (*por los dueños). |
| | the properties reflex | sold | by the owners |

As indicated, only the non-reflexive type may have a specified initial 1. Drawing additional arcs only for non-erasing advancements, the diagrams for (3) and (4) are (3') and (4'), respectively:

(3')




(4')




Observe that in the second stratum of (4') propiedades bears two relations. Spanish deals with this by insertion of anaphor se to take on the 2 relation, necessarily erasing the 2 relation of propiedades. (See Aissen and Perlmutter, 1976.5.2 for arguments that propiedades is final 1 of (4).)

German also has reflexive passives, as illustrated in (5):

(5) Diese Sachen vergessen sich nicht.
these things forget:pl refl neg

*These things are not forgotten.*

And (6) is apparently a reflexive passive from Micmac, and illustrates this phenomenon in a language which registers multiple relations on a single stratum by means of verb morphology (see appendix 1).

(6) telta- :s - ɨk - ap *It (music) was played.*
play-refl - 3s - pst

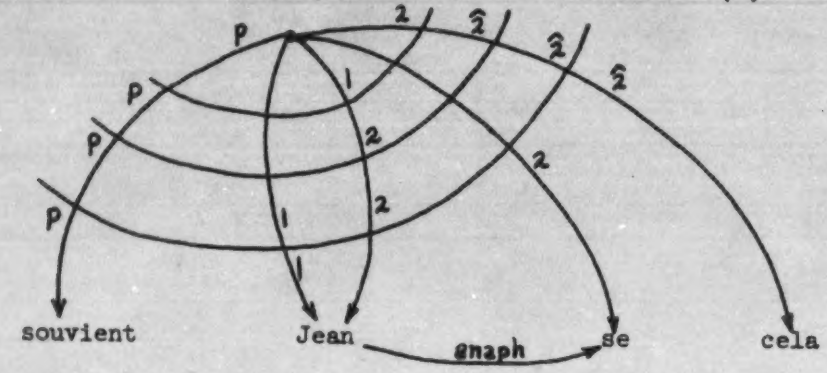
In combination with Postal's proposal for the mechanism of antipassive (see III.B.1.), non-erasing 2-1 advancement may account for certain other unexpected reflexives, such as that of the French example seen in (7):[21]

(7) Jean se souvient de cela.
J. refl remember:3s of that

*Jean remembers that.*

Diagram (7') shows the proposed relations involved in (7):

(7')



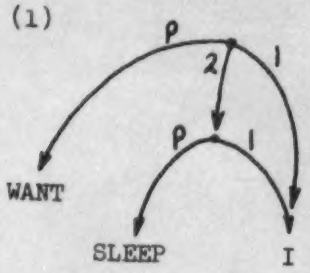

A similar analysis can account for (8) of Spanish:

(8) Me olvidé de tí. *I forgot you.*
1s:refl forgot:1 of 2s

IV. Multiple Dependency

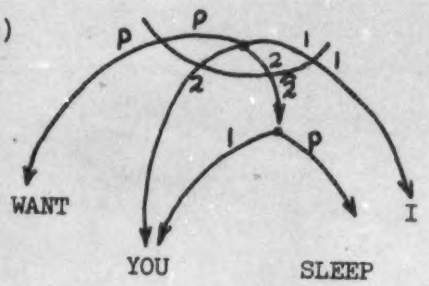
In networks, a given nominal can be a dependent of more than one governor. This multiple dependency can involve exclusively initial GR's, as in (1), or it may involve an ascension, as in (2):

(1)




*I want to sleep.*

(2)




*I want you to sleep.*

There are essentially three ways that languages deal with multiple dependencies. Here we will label them Status Quo, Equi-erasure, and Replacement.

Status Quo

The Chichewa, Blackfoot, and Micmac data of III.D. illustrate the status quo way of dealing with multiple dependency. The embedded clauses have exactly the form they have in the corresponding sentences without ascensions, apart from presence of the NP which has dual dependency. (Recall that in III.D. we explained this lack of an NP in the complement by saying that linearization generally places an NP in the earliest position called for on the basis of its dependencies.)[22]

Equi-erasure

English sentences (3) and (4) illustrate equi-erasure. The 1 GR to the downstairs verb is 'erased' by the us GR; consequently, the ds verb is marked as an infinitive by to. It is not inflected for tense, nor does it agree with a subject.

(3) I expect to win.

(4) I expect him to win.

In cases of 'erasure' of the ds 1 relation, the ds verb will exhibit no evidence that it has a final subject.[23] Thus there will be no agreement with a final subject, nor placement of a final subject in a position that is uniquely determined by its dependency on that verb.

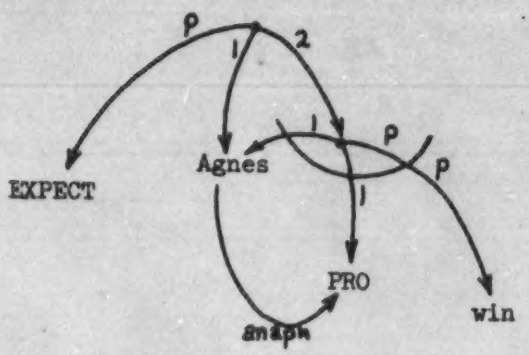
Replacement

English sentence (5) illustrates this way of dealing with multiple dependency:

(5) Agnes expects that she will win.

The network for (5) is (5'):

(5')



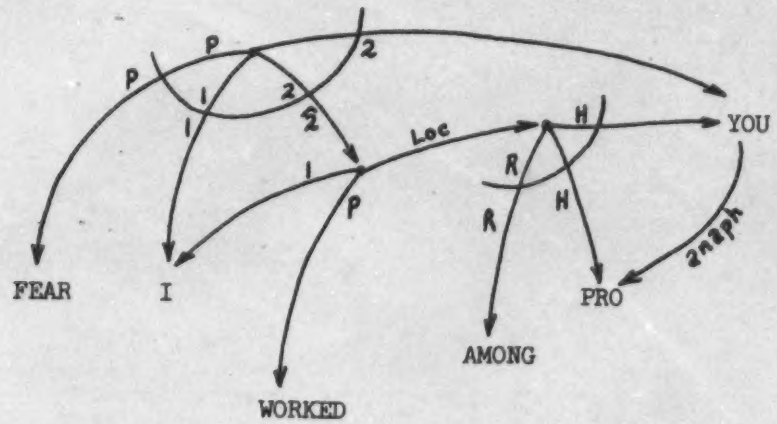

Koine Greek utilizes pronoun replacers to deal with multiple dependency in ascension cases if the ds relation is other than 1. (6) is evidently a case of Locative ascension, for humas *you* is final (but not initial) 2 of *fear*, and controls another humas in the locative phrase eis humas.

(6) Phoboumai humas me: po:s eike: kekopiaka eis humas.
fear:1 2:accus neg how in-vain worked among 2:accus

*I fear that I worked among you in vain. (Gal. 4:11)*

The network for (6) is, very roughly, (6'):[24]

(6')



(This network ignores the negative element, which in (6) does not function as a literal negator, the adverbial eike;, and the element po:s which is evidently associated with them.)

V. Noun Incorporation

It is relatively common, especially in Native American languages, for the head noun of a nominal (the 'launching pad') to appear as a constituent of the verb of a clause. This is most frequently found where the launching pad nominal is a 2, as seen in example (2) from Onondaga (Iriquoian):

Onondaga (Woodbury 1975)

(1) wa'hahninú' oyé'kwa' *He bought tobacco.*
tns:3s:3s:buy:asp tobacco

(2) wa'ha-yɛ'kwa-hní:nu' *He bought (a kind of) tobacco.*
tns:3s:3s-tobacco-buy:asp

And 1's of intransitive clauses may also be launching pads, as seen in (4):

(3) kahihwí ne' ohsahé'ta' *The beans are spilled.*
3s:spill:caus:asp particular bean(s)

(4) ka-hsahe'ta-híhwi *Beans are spilled.*
3s-bean(s)-spill:caus:asp

As the translation of (2) indicates, incorporation of a noun is often accompanied by a difference in referential status of the launching pad nominal in the discourse as compared to the counterpart without incorporation (see Merlan 1976).

The reason for saying that it is the head noun (or its root) that incorporates is that in some languages the "remainder" of the noun phrase may be intact, as in the following Inupiat examples (courtesy of Wolf Seiler):

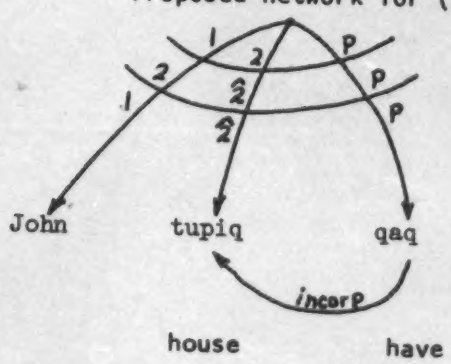
(5) John aŋirau-m-ik tupiq - qaq - tuq. *John has a big house.*
J. big-sg-instr house - have- 3s

(6) Fred iñugiaktau-n-ik qaluk - tuq - tuq. *Fred eats many fish.*
F. many-pl-instr fish - eat -3s

In (5) and (6), the instrument PP flags a final $\hat{2}$ of these antipassive clauses. In this case, the two verbs in (5) and (6) require antipassive and incorporation, but there are other languages which either limit incorporation to chomeurs or require incorporation of absolutive chomeurs. We saw in section D that Blackfoot requires incorporation of possessor ascension chomeurs.

In summary, absolutives or absolutive chomeurs launch incorporatees, often under limited conditions of reference. I know of no cases of incorporation from final ergatives. There are apparent cases of incorporation from other than absolutive hosts, but these may only be apparent or involve a different mechanism (e.g. in conjunction with adverbial clause union).

Proposed network for (5):



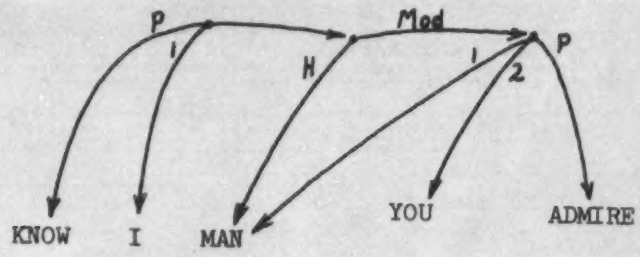

## VI. Relative Clauses

A relative clause is one which bears the modifier relation to a nominal. In every case, that nominal will also bear a relation to a governor in the modifying clause. For example, the initial relations of (1) are

shown in (1'):

(1) I know the man who admires you.

(1')

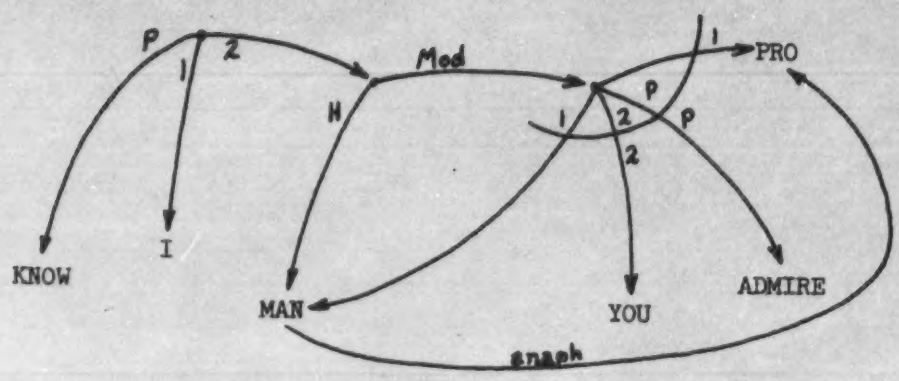



Notice that MAN bears GR's to verbs of both the matrix and relative clauses. We will refer to these two relations of a nominal as the matrix GR and the relative GR. The nominal which bears these two initial relations we will refer to as the (initial) head. So in (1') MAN is the head, and it bears a matrix 2 GR and a relative 1 GR. We will find it useful to classify relative clauses according to the relative relation of the head. Thus the modifying clause of (1) is a subject relative, while a sentence like (2) contains a direct object relative:

(2) I know the man who(m) you admire.

As we have said, the head bears relations to two governors, and as in other cases of multiple dependency, languages can deal with this either by allowing the status quo or by use of a pronoun. Our first English example ...the man who admires you illustrates the pronoun strategy. In English, and in many other languages, the relative pronoun (in this case who) necessarily bears linear precedence to the remainder of the relative clause. The relative pronoun helps to flag the relative clause, and the actual "spelling" of the pronoun is determined by number and semantic class of its controller. The partial network for our example sentence (1) is (1"):

(1")




English requires that subject relatives be marked[25], so if no relative pronoun is used, the clause must be flagged by that:

(3) I know the man that admires you.

English allows other relative clauses to go unmarked; so (4) - (6) are well-formed without either pronoun insertion or flagging of the relative clause:

(4) I know the man you admire.

(5) I know the man you gave the cake to.

(6) I know the man you danced with.

In sentences (5) and (6) we observe that the usual flags for the relative relation are present in the relative clause even though there is no overt nominal in the relative clause to flag. (7) and (8) show that if a relative pronoun is used, these flags can be placed with the pronoun:

(7) I know the man to whom you gave the cake.

(8) I know the man with whom you danced.

As a final observation about English relative clauses, we note that the head always bears linear precedence to the relative clause.[26]

In many languages (usually verb-final languages), relative clauses

bear linear precedence to their heads. In most of these it is common, in fact often preferred, to have the head nominal appear in the linear position appropriate to its relative GR rather than its matrix GR. (This of course is in accordance with our earlier observation that a nominal will generally be placed in the earlier of two positions called for by its two dependencies.) Thus in Navajo (Platero 1974) both (8) and (9) are possible:

(9) [Tl'éédą́ą́' at'éél yiyiiłtsą́-(n)ę́ę] ashkii yáádoołtih.
last=night girl 3:perf:3:see-nom boy fut:3:speak

*The boy who saw the girl last night will speak.*

(10) [Tl'éédą́ą́' ashkii at'éél yiyiiłtsą́-(n)ę́ę] yáádooltih.
last=night boy girl 3:perf:3:see-nom fut:3:speak

*The boy who saw the girl last night will speak.*

In (9) the brackets enclose the relative clause which modifies ashkii *boy*. In (10) the noun ashkii is within the relative clause at the position determined by its relative GR, whereas in (9) ashkii is at the position determined by the matrix GR. Notice that(10) is actually ambiguous, because there is no syntactic evidence to indicate whether boy or girl is the head; so (10) can also mean *The girl who the boy saw last night will speak.*

Despite the ambiguity often entailed, there are languages which always have the head nominal placed according to its relative GR. Observe the following Wappo sentences (Li, Thompson, and Sawyer (1977)):

(11) 'ah [ce k'ew 'ew t'um-tah] naw-ta'
1s that man fish buy-pst:sub see-pst

{*I saw the man who bought fish.*
*I saw the fish which the man bought.*}

(12) [ce k'ew 'ew t'ohtih] 'i pehkhi'
that man fish catch:sub 1s look=at

{*The man who was catching a fish was looking at me.*
*The fish which the man was catching was looking at me.*}

(13) 'ah [ce k'ew 'ew ṭ'oh-tah]-thu taka' mahe-ta'
Is that man fish catch-pst:sub-to basket give-pst

{*I gave a basket to the man who caught a fish.*
*I gave a basket to the fish that the man caught.*}

All of (11) - (13) are ambiguous because there is no way of telling which noun in the relative clause is the initial head; i.e., there is no indication whether these are subject relatives or object relatives. It is clear that k'ew *man* of (12) is within the relative clause, or else with the first of the two meanings k'ew would be marked as matrix subject by suffix -i, as in (14):

(14) ce k'ew-i 'ew ṭ'oh-ta'
that man-I fish catch-pst

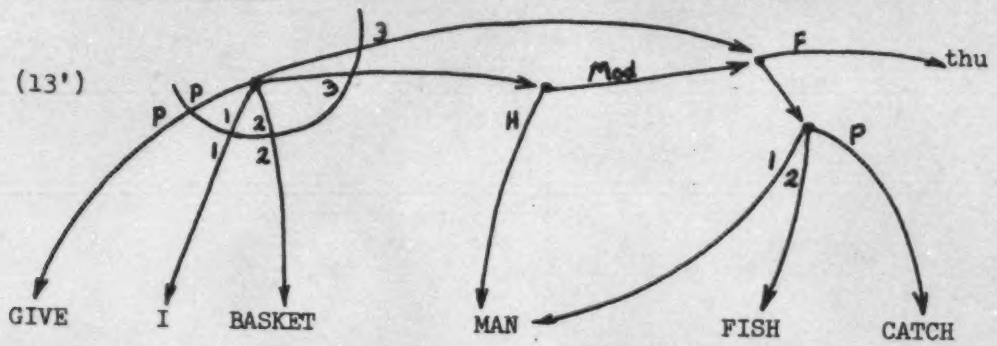
*The man caught a fish.*

Also observe that in (13) the indirect object marker is attached to the entire relative clause, rather than to either of the possible heads. In addition to being further evidence for the lack of an external head, this serves as an excellent example of how languages deal with stranded flags which cannot stand as separate words.[27]

Examples such as (13) show that there is more involved than linear placement of the head nominal according to its relative GR, for that alone would not account for the position of the flag (-thu) which marks the matrix GR of the head (indirect object). We could take care of this by positing a PRO replacer which bears the matrix relation, and assuming that because this pronoun is silent (phonologically null), the flag -thu attaches to the relative clause verb. Alternatively, following a suggestion by Wayne Leman, we can say that the relative clause itself bears

the matrix relation; i.e. that in (13) the initial modifier is final 3.[28] Thus in addition to status quo and replacement, a third possible way languages deal with the multiple dependency of the head is by what I will call modifier ascension. Network (13') illustrates this:

(13')




In the network I have shown modifier ascension as "erasing" the matrix relation of the initial head, just as would replacement, rather than creating a chomeur as would other ascensions.[29] With this analysis, the flag -thu attaches to the (nominalized) verb because it (plus its dependents) is the final 3.

I have no really clear examples of languages in which a replacer pronoun bears the matrix relation while the initial head noun retains only the relative relation. The suspected cases all involve a demonstrative which may be functioning as a pronoun in these cases. Sentence (15) from Dakota (Siouan) will serve as an example:

(15) wičaša wan ṭaȟča kin hokšina num kte-pi kin he yuta
man a deer the boy two kill-1:pl the that=one eat

*A man ate the deer two boys killed.*

Because Dakota gives linear precedence within the relative clause to the noun which is initial head, it is not so obvious that it is not placed according to the matrix GR. To show this we need a sentence such as (16),

in which a temporal noun of the relative clause precedes the noun in question:

(16) wičaša wan [ṭtanihaŋ ṭaȟča kin hokšina num kte-pi
man a yesterday deer the boy two kill-1:pl

kin] he yutiŋ-kte
the that=one eat - fut

*A man will eat the deer the two boys killed yesterday.*

[NB: This sentence is not actually attested.]

Because Dakota requires that the initial head noun be the first term within the relative clause, there is no indication of whether it bears the 1 or 2 GR. So if the relative clause 1 and 2 are both singular, the sentence can be ambiguous as (strictly speaking) is (17):

(17) wičaša wan [ṭaȟča kin hokšina kin kte kin] he yuta
man a deer the boy the kill the that=one eat

*A man ate the deer that* { *the boy killed.* / *killed the boy.* }

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Appendix 1.

MULTIPLE RELATIONS IN A SINGLE STRATUM

A single nominal may bear more than one relation to a given predicate in a single stratum, but no nominal may bear more than one term relation to a given predicate in a final stratum.

DEVICES FOR DEALING WITH MULTIPLE RELATIONS

1. Pronoun insertion, with lower ranked of the GR's:

Indonesian:

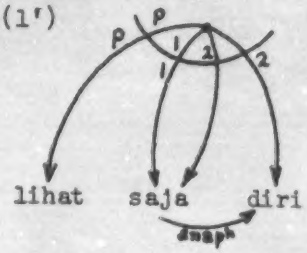
(1) Saja me-lihat diri.
I trans-see self

*I see myself.*

(2) Sjarahrir me-lihat diri.

*Sjahrir sees himself.*

(1')




Latin:

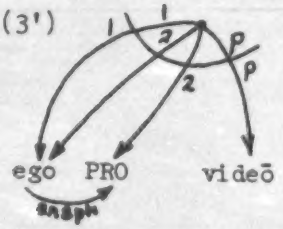
(3) Ego mē videō.

*I see myself.*

(4) Puella sē amat.

*The girl loves herself.*

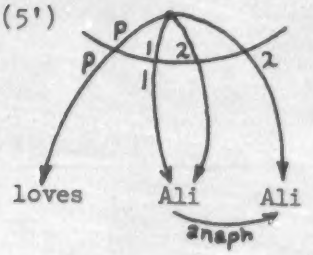
(3')




2. DOUBLING

(5) *Ali loves Ali the most!*

(5')



3. ANTIPASSIVE

Combined with PRO insertion:

Mabuyag:

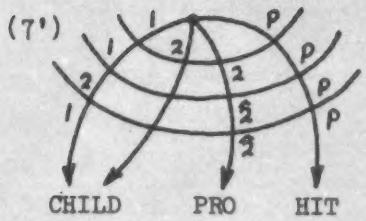
(6) Moegikazi-n mabayg matham-dhin.
child-erg man hit-pst

*The child hit the man.*

(7) Moegikaazi nungungu matham-ay-dhin
child:nom 3:elative hit-intrans-pst

*The child hit himself.*

(7')



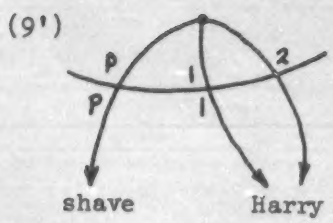

SELF-ERASURE

English

(8) Harry shaved himself.

(9) Harry shaved.

(9')




Combined with verb derivation:

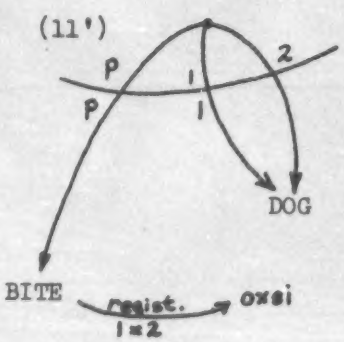
Blackfoot

(10) Oma imitaa-wa siiksip-iiwa omi aakii-yi
that dog-3s bite-3s:4s that woman-4s

(11) Oma imitaa-wa siiksip-oxsi-wa.
that dog-3s bite-reflex-3s

*That dog bit himself.*

(11')



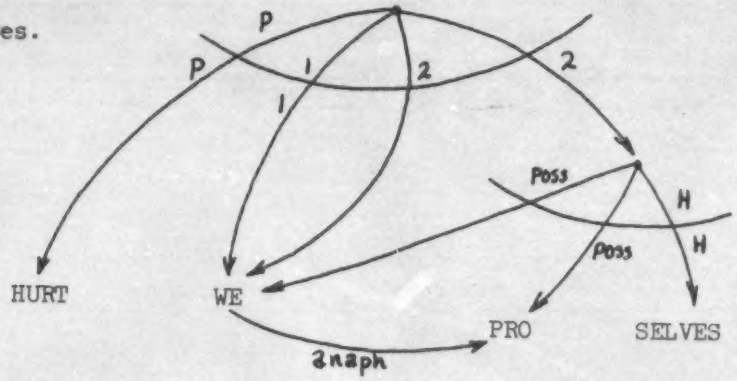
COMMON ADDITIONAL EFFECT OF INSERTIONS IN MULTIPLE RELATION NETWORKS

Controller bears the possessor relation to its anaphor. Often, this calls for an additional replacer:

English

(12) We hurt ourselves.

(12')



Appendix 2.

Relational Grammar Laws and Tendencies

LAWS

Stratal Uniqueness Law: No two nominals can bear the same term relation to a single predicate in the same stratum.

Relational Succession Law: An ascendee assumes the GR of the host.

Agreement Law: Only nominals bearing term relations (in some stratum) may trigger verb agreement.

Host Limitation Law: Only nuclear terms [1, 2] can serve as hosts for ascensions.

Nuclear Dummy Law: The only GR's a dummy can bear are 1 and 2.

Motivated Chomage Law: A nominal can be a chomeur only as a result of the Chomeur Condition.

Chomeur Condition: If x bears term relation n to P in stratum $S_i$, and if y (where $y \neq x$) bears term relation n to P in $S_{i+1}$, then x bears relation n-chomeur ($\hat{n}$) in $S_{i+1}$.

Subject Advancee Exclusiveness Law: No clause can involve more than one advancement to 1.

Revaluation Target Law: For every revaluation, the "later" relation is a term relation.

Final 1 Law: Every unembedded clause must have a (specified?) final 1.

Chomeur No-Advancement Law: Chomeurs do not advance.

OTHER PRINCIPLES:

Brother-in-law Principle: When a term that can trigger agreement is a dummy, then either

(a) there is agreement with the dummy's brother-in-law, or

(b) there is no agreement at all and a verb has its least 'marked' form (e.g. third-person singular).

Chomeur-marking Principle: If there is no rule marking "retirees" (chomeurs and emeritus GR's) in a particular way, a retired n will be marked like an n.

Universality of initial termhood: initial GR's are predictable from semantic relations.

TENDENCIES (Other things being equal, the analyst should choose the analysis which obeys the following, over one which does not.)

A replacer has the lower-ranked GR of a multi-attached dependent.

A controller outranks its anaphor.

A controller precedes its anaphor.

Reflexivization involves clause mates.

Reflexive controller is a 1.

Reflexive controller is a 1 and target is a 2.

i.e., if a language has reflexivization at all, it will have it when the 1 and 2 of a single verb are the same nominal.

Final terms trigger agreement.

A nominal is ordered in the earliest position called for by multiple dependencies.

Advancements are erasing.

Languages sanction advancements rather than retreats.

Appendix 3.

## Syntactic Tests for Grammatical Relations

Typical and atypical tests which will be based on the behavior of the clear cases.

1. Word order: fixed position or alternate LP possibilities
2. Nominal marking: case (of noun or pronoun); pre- or post-position (PP)
3. Verb marking: Agreement (initial or final); registration; registration of revaluation.
4. Participation in revaluations, etc.
   (a) Advancements (e.g., if an NP is a 2, then eligible for 2-1).
   (b) Ascensions
      (1) Limitations on ascendee (e.g., if only 1's ascend, then ascension is a test for 1's).
      (2) Predictions of laws (e.g., if ascendee becomes a 2, then host was a 2).
   (c) Replacements (e.g., if dummy clearly a 1, then the replaced term was a 1).
   (d) "Quantifier floating" (e.g., if quantifiers "float" off only 1's, as seems to be true of English: [All of the boys] are here vs. [The boys] are all here.)
   (e) Clause unions: If clear cases are well-behaved according to the universal rule(s), then behavior of unclear cases should be diagnostic of ds termhood for those cases.
5. Participation in rules which do not affect termhood, but make reference to GR's:

(a) Incorporations (e.g., if only absolutives incorporate).

(b) "Fronting" or "dislocations" (e.g., Spanish 'Head Start' as a test for subject [Aissen & Perlmutter 1976]).

(c) "Reductions" (e.g., gapping requires parallel GR's).

(d) Relative clause formation strategies (e.g., if a particular way of forming RC's is used for forming only absolutive relatives).

(e) "Copy" rules (e.g., English tag formation).

6. Category differentiations

(a) Contrast limited to certain terms (e.g., dual and plural distinguished only for 1's in Isleta).

(b) Classificatory (e.g., stem classes or classifier presence governed by class membership [e.g., shape, gender, etc.] of absolutive).

(c) Stem allomorphy (e.g., verb allomorph determined by number of initial absolutive).

7. Coreference phenomena

(a) Reflexivization (limitations on controller and anaphor).

(b) Other anaphora (limitations on antecedents).

(c) Switch-reference systems.

(d) Possessor reflexivization (e.g., if controller must be a 1).

(e) Equi-subject constraints on particular verbs.

(f) Equi-subject union application as a test for us and ds 1.

Appendix 4.

Summary of Marking Devices

1. Linear precedence
2. Flags
   a. mark nominal dependents of verbs: case or PP's (e.g. Japanese ga, o, ni)
   b. mark complements and/or other subordinate clauses: nominalizers; "complementizers"; "subordinators" (e.g. -ing, that; Navajo -igii)
   c. mark dependents of nouns: possessive case or PP; relative clause marker
   d. other possibilities: marks infinitive (e.g. Wappo -ukh)
3. Agreement

   Predicate marked for features of its terms (usually person, number, and noun class)

   Agreement Law: Only terms can trigger verb agreement.
4. Registration
   a. indication on a governor of the presence of some dependent (e.g. Blackfoot Instrumental prefix in the verb)
   b. indication that some transition is involved in the network (e.g. Japanese -(r)are registers 2-1)
5. Concord
   a. dependents marked for some category or feature of their governor (e.g. gender and number agreement in Spanish NP's; Lardil tense concord)

Lardil

ngata neth-ur yarputh-ur wangalkuna.
I kill-fut snake-fut boomerang:instr:fut

*I'll kill the snake with a boomerang.*

Spanish

| | |
|---|---|
| la niña hermosa | *the pretty girl* |
| las niñas hermosas | *the pretty girls* |
| el niño hermoso | *the handsome boy* |
| los niños hermosos | *the handsome boys* |

b. non-verbal "predicate" adjectives and "predicate" nouns marked for categories of the subject

| | |
|---|---|
| La niña es hermosa. | *The girl is pretty.* |
| Las niñas son hermosas. | *The girls are pretty.* |
| El niño es hermoso. | *The boy is handsome.* |
| Los niños son hermosos. | *The boys are handsome.* |

Appendix 5

A Partial Bibliography for Relational Grammar

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Bell, George, and Johnson 1974 are "early relational grammar" works. Aissen and Perlmutter is an excellent example of the type of argumentation important to the theory. Keenan ("west coast" RG) does not make the RG terms primes. Postal 1977, and Postal and Perlmutter 1977 are the only readily available papers making use of "uninetwork" RG. Perlmutter (in press) will contain original papers as well as important papers published previously in "proceedings" volumes.

## FOOTNOTES

[1]Except in certain contexts, one of the NP's of Japanese sentences would be marked as 'theme' with PP wa. So in isolation, a speaker of Japanese would replace the ga in (1) - (3) with wa.

[2]The first and second person 'pronouns' are in parentheses because they would be present only for contextual contrast.

[3]Strictly speaking, our "networks" are stratal diagrams which are a simplified representation of well-defined formal objects called arc pair networks (Johnson and Postal, to appear).

[4]The 4 in glosses stands for the subordinate animate third person.

[5]Usually marked in English with PP about.

[6]I here ignore the problem of how RG will account for the meaning added by the preposition in such Location NT's (cf. on the bed, under the bed, beside the bed, etc.).

[7]Examples courtesy of David Johnson.

[8]Evidence for the initial 1-hood of Rezo in (9) includes reflexivization, which in Georgian is triggered by coreference with an initial 1.

[9]Micmac data courtesy of Watson Williams.

[10]II indicates an intransitive verb which takes an inanimate gender 1; AI indicates an intransitive verb which takes an animate gender 1.

[11]The stratum shown as us initial in (16') is not actually initial. See Perlmutter (1978).

[12]A similar relationship may exist between English pairs such as (i) and (ii).

(i) She punched my arm.

(ii) She punched me in the arm.

[13]This is not true of all chomeurs in Blackfoot.

[14]French clitics are conventionally written as separate words when they precede the verb to which they cliticize.

[15]Most speakers would consider (31) and (32) somewhat unusual, preferring the counterparts which involve 1-ascension (see III.D).

[16]This is stated under the assumption that ketu- and puatɨm are allomorphs. If they are considered different verb roots, then ESU is necessary with ketu- but not possible with puatɨm-.

[17] (36) and (37) have infinitives (comer) because of identity of the 1 of *eat* and the 1 of *want* (see IV), while the infinitive of (38) is a $P_e$ of ESU.

[18] Capanahua is a Panoan language of Peru. Data are from Eugene Loos.

[19] It is possible to use the ergative first person pronoun in (49), but verb inflection would still indicate intransitivity. Thus it must be that the choice of focused pronoun in a sentence such as (49) can reflect either the final GR or initial ds GR.

[20] Actually, it has only been determined that the initial ds 2 is not a final 2 in Capanahua ESU's. It may be that antipassive puts this 2 en chomage in the union. Further research is necessary to determine this and also to determine the final status of other intial ds nominals.

[21] Example and analysis courtesy of Dave Perlmutter.

[22] Johnson and Postal (in press) rule out such an analysis a priori, primarily because they wish unerased arcs to determine surface constituent structure, and a nominal heading two structural arcs would be a constituent of two constructions. Thus Johnson and Postal require erasure of one of the two arcs, either by the other arc or by a replacer. Our mention above that in the Chichewa, Blackfoot, and Micmac cases of multiple dependency the ds clauses have the same form as if they were not embedded, does not contradict Johnson and Postal's claim, for in such cases they would say the us arc has erased the ds arc with which it shared a head; but such an arc, erased by an arc of another clause, still meets their definition of 'final arc' of the ds clause.

[23] See discussion in previous note.

[24] Makeshift notation in LOC phrase: R = relator (preposition) and H = head ("relatee").

[25] The functional explanation for this is apparently that it prevents a wrong first "guess" by a hearer that the verb of the relative clause is either a main verb or a complement verb

(i) The man *(who) admires you is here.

(ii) I know the man (who) admires you. (Not a relative clause if who is omitted.) [An asterisk outside parentheses means 'bad unless enclosed portion is present'.]

[26] This discussion ignores additional complexities involved when relative clauses are "extraposed" or otherwise separated from their head as in (i) and (ii). In general, it seems that such relatives must be flagged as such.

(i) *The man arrived you don't like.

(ii) ?*Who arrived you don't like?

[27] I would suggest that the final -h on Wappo relative clauses is a nominalizer, for stranded flags in other languages are known to attach only to nominalized verbs.

[28] Gorbet (1974, 1977) has long claimed that such "headless relatives" are constituents of the matrix.

[29] This analysis has great potential, in my view. It may provide motivated treatments of nominal appositives such as adjectives and participles. If these are initial predicates of relative clauses which have ascended to become nominals, the nouns with which they "agree" in case and number are in fact agreeing with their nominalized predicate governors. (I owe this observation to Victor Loos.) Also, other nominal properties of adjectives are explained.